THE PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY

PULP & PAPER

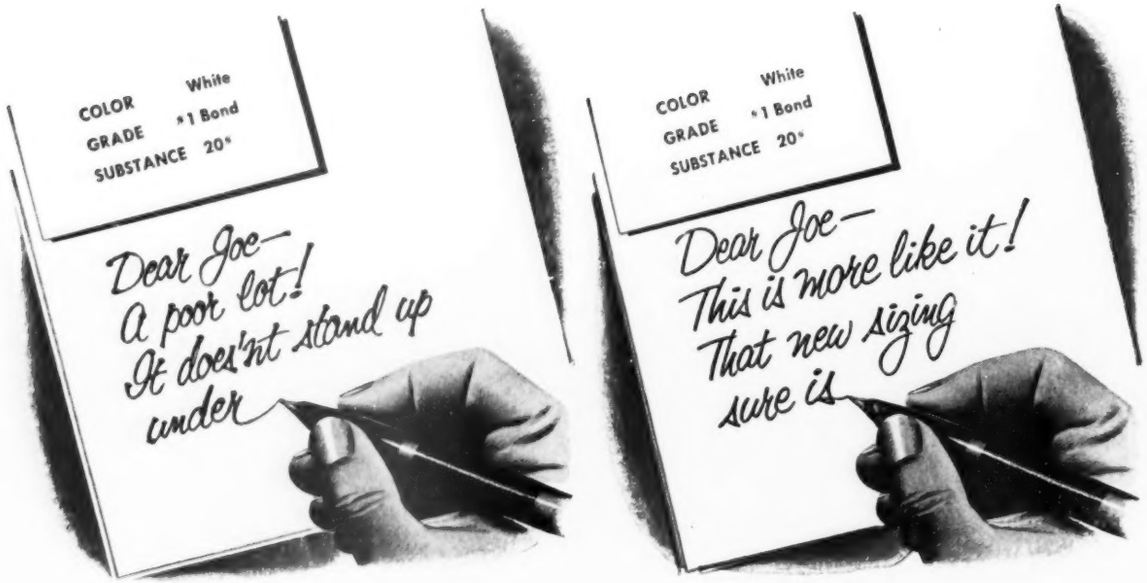
"the Cellulose Age"

OCTOBER, 1953 VOL. 27-NO. 11

NEWTON FALLS—AIR VIEW OF NEW YORK'S "MILL OF TOMORROW"—SEE STORY IN THIS ISSUE

ALSO: DEFENSE AND STATE DEPARTMENTS' VIEWS OF JAPANESE PLANS FOR ALASKA MILL

INTERNATIONAL CONGRESS IN SWEDEN—PULPWOOD MECHANIZATION IN MAINE—CANADIAN MILL



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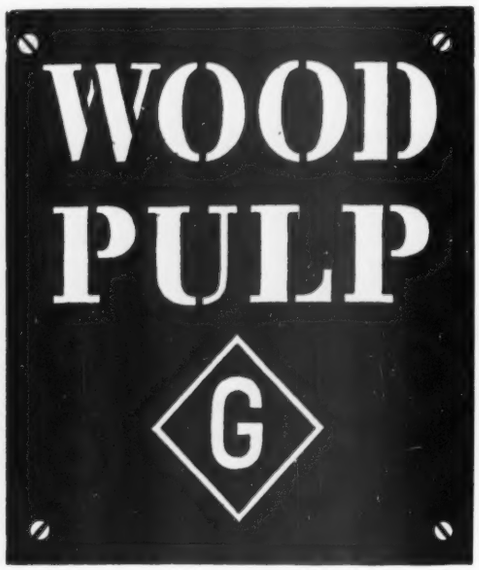

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PULP & PAPER

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"The Cellulose Age"

ABC ABP

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More about the Timber Resources Review

In regard to our editorial in the August issue—which proposes that the decennial Timber Resources Review, due for completion in 1955, should be a joint industry-government undertaking—we expected some letters pro and con.

But we did not anticipate that our suggestion would be interpreted as applying to the regular Forest Surveys. These, of course, are cooperative, and particularly in the South, where our own editors report that excellent jobs are done, conducted on a cooperative basis with industry, state and federal government.

But it is how these facts are interpreted in the Timber Resources Reviews that has high-principled industry executives in a kind of state of frustration. It is too late—they can't be heard—when they tried to challenge the crystal-gazing of the Timber Resources Reviews.

A U. S. Forest Service executive was "surprised and concerned" by our editorial, but it turns out he misunderstood it and thought it referred simply to the regular surveys.

"I have never before heard any responsible person familar with the facts seriously question the integrity of the Forest Survey, which, as you should know, is quite different from and should not be confused with the 1945 Reappraisal and the current Timber Resources Review," he wrote.

On that point we certainly heartily agree.

In the Timber Resources Review, there exists some discrepancies or ignoring of certain elements or factors of supply. Figures quoted are selected figures of the U. S. Forest Service. These discrepancies exist in the South, but even more so in the Far West, where substantial volumes of wood are obtained from pre-logging, salvage, etc., and have not been reckoned with in the Resources Review.

Industry leaders are heartily in favor of gathering the basic data, getting the inventory completed, but can't go along with the crystal ball gazing which predicts what the situation will be in 1975, when we don't rightly know what is contained on the hillside now in the Far West, particularly.

One comment on our August editorial:

If industry can't be given a joint role in the Timber Resources Review, why not have a private industry survey of public forests, to offset the Forest Service's interpretations of private owned forests?

Facts About a Great Industry

This is not only one of the oldest of industries but one of the largest in the United States*.

Paper is the most consistently used consumable product.

It is used by the average American around the clock, from morning until night and from birth until death.

(The above is excerpted from the "*1953 Annual Report to Champions*" issued by Champion Paper & Fibre Co.)

*As stated in Crown Zellerbach advertisement in *Fortune*, which also stated that about 130 companies make 78 percent of the total pulp and paper production in the United States.

Industrial Worker and Retirement

How do industrial workers feel about retirement?

Columbia University recently conducted a survey among the AFL Ladies' Garment Workers union members, 700 of them from age 55 to 70. The "younger" ones indicated they look forward to retirement but the older ones wanted to put it off.

The report said only through their work did these employes make friends, express creative interests, achieve status in the community. Only 140 said they would have enough to live on during retirement, even with pension and social security. Tax exemption for systematic savings was a suggested remedy.

The survey teaches an old lesson. That work is a "way of life" and in paper mill towns it is a good way of life.

National and International

A typical Wisconsin paper mill spends money all over the United States.

This is how a purchasing agent described it:

"Our pulp comes from British Columbia, Washington state, Alabama, Georgia, Sweden and Finland. Our clay comes from Georgia. Our waste paper comes from many states, including those as far away as Washington, California, Texas and Florida. Other supplies coming from many different states include lumber, coal, chemicals, machine clothing, machinery, etc., and it all adds up to several millions of dollars annually."

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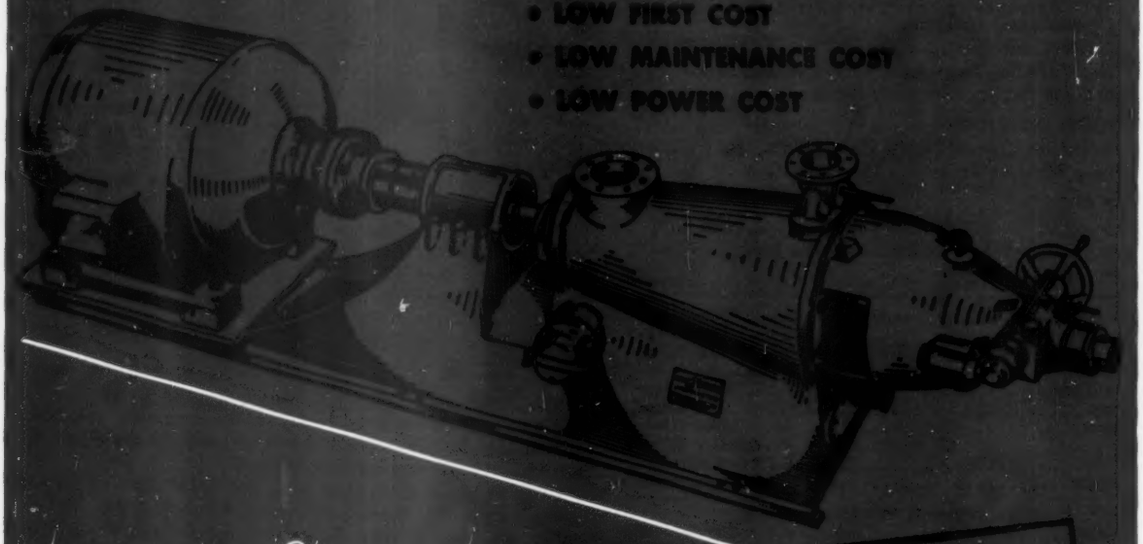

✳ LOOK AT THE RECORD

Here's a comparison of the results achieved on the same stock under the same conditions by the STOCKMASTER and a competitive "beater" type refiner.

COMPARATIVE TESTS UNBLEACHED DOUGLAS FIR KRAFT

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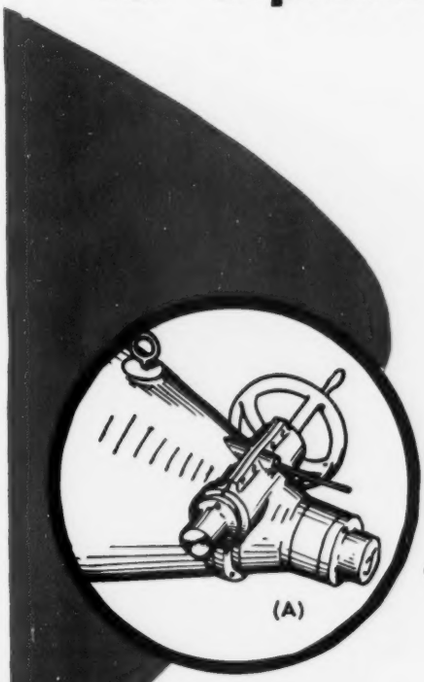
Speed		1.96
Fibre Quality After Applying 600 HP Hrs./Ton	2.20	325
Fibre Length — MM*	250	6300
Freeness — CC CS	7000	37
Breaking Length — MM	45	144
Burst — Metric	182	
Tear Factor		
Fibre Quality-At 400 CC CS Freeness	2.32	2.05
Fibre Length — MM*	410	550
Power Required — HP Hrs. Per Ton	6100	5800
Breaking Length — MM	42	36
Burst — Metric	218	172
Tear Factor		

*Raw Fibre Length — 2.73 MM

for superior continuous beating



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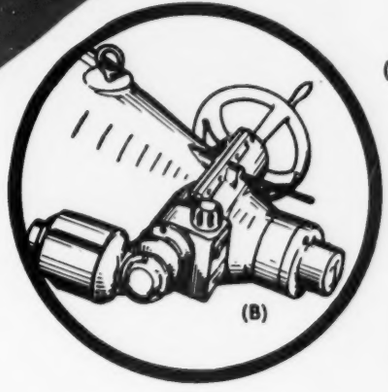
(A) Standard adjusting mechanism — 10" hand wheel with worm and worm gear reduction — permits very accurate adjustment of plug position and absorbed horsepower. It is a simple matter to add necessary gear motor and parts to change over to ACCRU-SET control at a later date.



(B) ACCRU-SET® Control — At modest extra cost, the basic mechanism shown above can be fitted with a gear motor for any desired type of control, from a simple push-button arrangement for remote control to full automatic control of applied power with indicating or recording, current-sensitive or watt-sensitive instruments.

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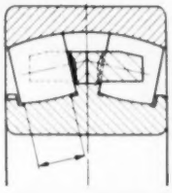
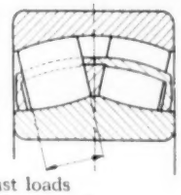


This is the Spherical Roller Bearing design originated by SKF *more than 30 years ago.* The cross-section shows how the integral inner ring flanges, and the undercuts adjacent thereto, limit the effective length of the rollers.

Now, SKF, originator of the Spherical Roller Bearing, has again provided industry with another anti-friction *first.*

This time, it's a revolutionary design advance in Series 222 and 223 bearings providing these advantages:

When designing new equipment, you can obtain the desired life by using smaller or lighter bearings at considerable cost saving. In addition, this forward step in design will carry heavier combinations of radial and thrust loads, or pure thrust loads of greater magnitude. The important self-aligning feature of SKF Spherical Roller Bearings has been preserved, so that considerable misalignment between the shaft and housing has no ill effect whatever on bearing capacity or life.



Here is the latest SKF improvement, a *revolutionary advance in design.* Effective roller guiding is accomplished by means of a separate ring. The need for undercuts is eliminated! This type of guide ring permits the rollers to take the position which their contact with the rings dictates. This assures uniform load distribution over the entire length of the longer rollers at all times. *Result* — greatly increased capacity and life.

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This 12-page booklet gives you additional facts — sizes available — added capacity, size by size — increased life you can expect for each size — dimensional tabulations — and load and speed data. Write now for your free copy of Booklet No. 365-2.

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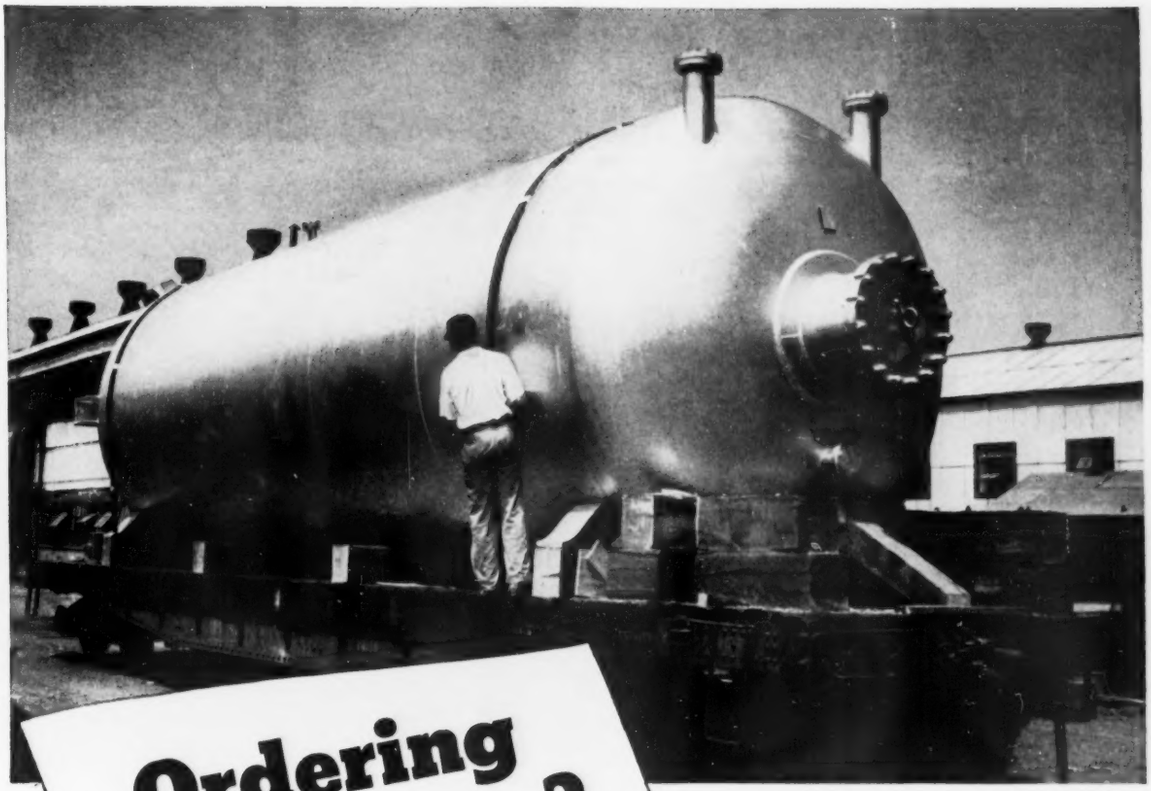

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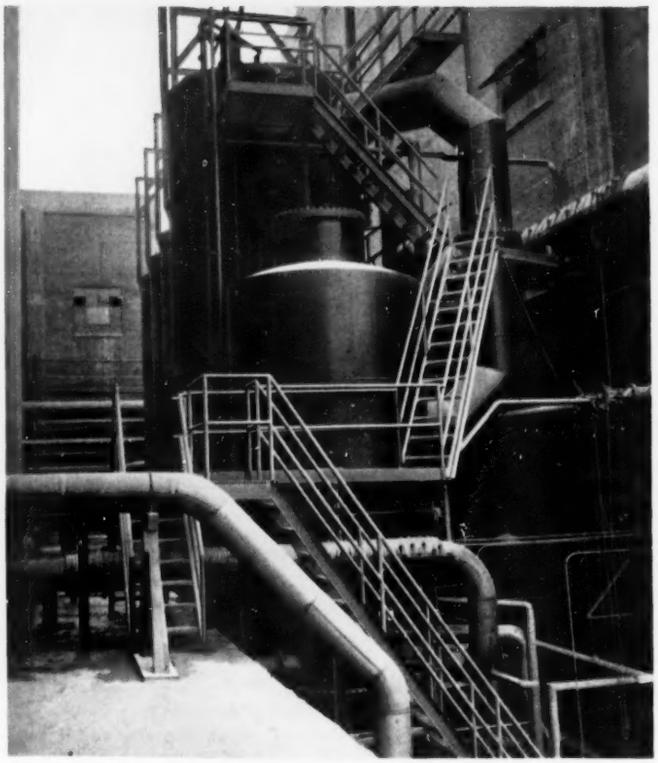

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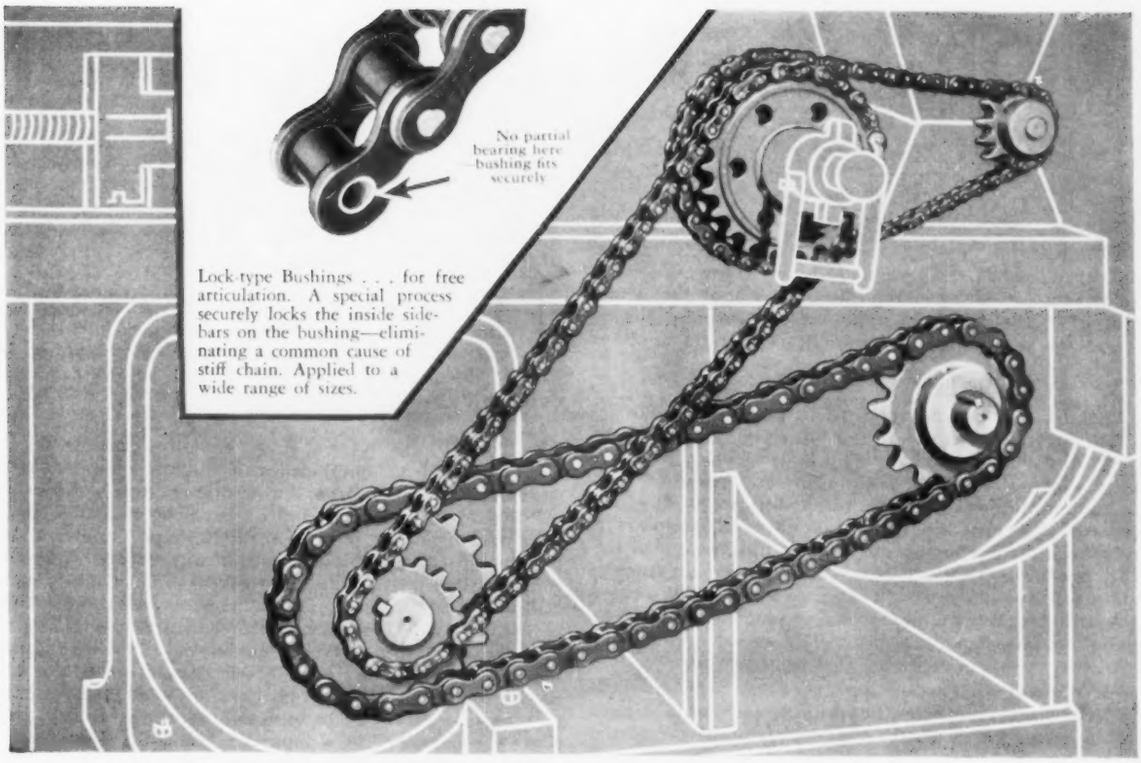
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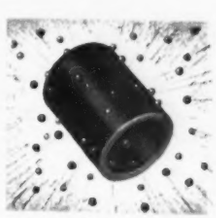

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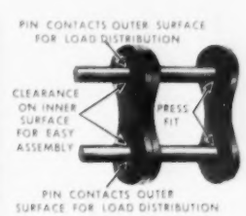
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PIN CONTACTS OUTER SURFACE FOR LOAD DISTRIBUTION

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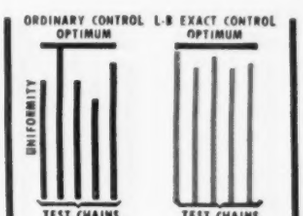

Closer heat treat control helps attain greater uniformity.

CHEMIPULP—K. C.

DIGESTER CIRCULATION

¶ The fundamental requirement for variable pulping rate in order to obtain any reduction of wood to pulp naturally leads to the failure of all known methods to eliminate non-uniformity. Some method to eliminate the basic faults of the direct-cook process was necessary.

¶ The advent of stainless alloys at about this stage opened a field which had previously presented a serious problem when the conventional copper base alloys were used.

¶ Experimental equipment was installed which permitted forced circulation of the liquor and the study of temperatures within the digesters was continued. This permitted a study of external heating, forced circulation with direct heating, various pumping rates, direction of flow, together with all possible combinations of these phases. Many other modifications were studied but in view of the simplicity of the ultimate arrangement, any divergence from the system finally developed proved to be little more than fanciful features which contribute little or nothing to the general efficiency.

¶ The earliest experiments indicated the benefits which forced circulation contributed to the process. The heat distribution was vastly better and the resultant pulp indicated the improvement in both yield and quality. It was soon learned that a very important problem still existed. Except when very extreme rates of liquor are used, the liquor and heat continue to rise at a high rate in the central core with a portion falling to the sides when moving the liquor upward, with a consequent overheating in the center. The high rates necessary to provide the proper efficiency were entirely impractical when the size of equipment and power consumption were considered. A more logical procedure was to ascertain the cause and eliminate the basic fault.

¶ It was soon found that the cause was the inherent nature of the chips and the manner in which they were piled in the digester. After much consideration it was believed advisable to study the charging of the chips as a solution to this part of the problem.

¶ This phase of the study resulted in the development of a device which eliminates the deflecting effect of the chips and the chip pile. The basic purpose is the proper distribution of chips to eliminate any deflecting effect. The machine does introduce a larger charge of wood into the digester and is thus frequently confused with so-called "chip packers." This is a very erroneous reference to the function since most of the "chip packers" do not fulfill the fundamental requirement to good pulping, that is correct distribution of chips. This subject is more thoroughly covered elsewhere.

¶ The introduction of chip distribution into the process led to the solution of the problem of heat distribution and thus to a means for control of pulping uniformity. In all cases, the variation in temperature was reduced to that which exists between the point of entry of the heated liquor and the point of exit of the liquor from the digester. Such phases of the problem as flow rate, method of heating, direction of flow, etc., are reduced to a minor significance and become dependent upon the facilities of the individual plant. The ultimate program merely required a practical solution of the mechanical features and the application of these to the peculiarities and limitations of the various sulphite mills.

¶ The reduction of the factors which affect the pulping and uniformity to a controllable basis did open the field to a much discussed and frequently misapplied feature of the process. This is the control of the process by automatic devices.

¶ Early in the study of direct cooking, controls were introduced to eliminate the human element to the greatest possible degree. Automatic controls were studied relative to rate of flow and demand according to predetermined cycles or schedules on both pressure and temperature factors. Automatic control of pressure was an extremely simple affair but this offered only a minor contribution to normal procedures in direct cooking. All conceivable features of automatic control of heat or steam flow indicated that in direct cooking no extensive improvement in either quality or uniformity could result, the minor advantage of providing the operator with an opportunity to give less attention to various operating features being the only benefit. The reasons are obvious since the controls alone play no part in the elimination of the basic variables.

¶ The successful solution of the problem of heat distribution completely changes the value of automatic controls to the process. Once the individual digester is provided with the means for maintaining uniformity, the accuracy of control must be maintained within a range of less than 1° C. Any deviation from this will result in differences in yield, chlorine consumption, rejections, and many quality factors. Manual control within this range is virtually impossible and highly impractical and, since the benefits derived from automatic control far outweigh the cost of the equipment, this cost can be repaid many times over by eliminating the possibility of little more than nominal neglect. Automatic controls thus become an essential part of an efficient pulping process.

¶ Although some installations of automatic control have been made in instances where the steam was injected directly into the digester, the time lag prohibits accuracy of control. As a result, for many years the only satisfactory means for introducing heat was by means of tubular heaters, or so-called indirect heating. This type of heating has certain definite benefits to some plants. Strictly local conditions frequently exist which make impractical the installation of this type of equipment for digester operation. The attempt to meet these situations led to considerable experiment and investigation of heating systems which would be applicable to any set of conditions. The search finally resulted in the application of a type of direct heater known as the Hydroheater.

¶ This equipment has been used quite widely for heating water without excessive noise or hammer. The construction and design of the heater is relatively simple. It consists of a combining tube through which the liquor

in the SULPHITE PROCESS

passes at a very high velocity, on arrangement of a steam valve so placed as to introduce the steam into the rapidly moving liquor, and means for adjustment of the position of the combining tube. The high velocity of the liquor and the arrangement of the valve is such that the steam condenses very rapidly without undue noise. The design of the heater is such that it becomes part of the pipe line and thus is adaptable to a wide range of locations and positions.

¶ The application of this heater to the process has greatly simplified the completion of the program and because of its simplicity and the adaptability to most situations, it provides the operation with one of the outstanding features and developments in some time.

¶ The completion of the program for the control of the heating and heat distribution brought into prominence certain factors which, although generally recognized as fulfilling an important function are all too frequently neglected and are not considered to be of sufficient importance to require accurate control or adjustment. The magnitude of the changes caused by these factors on a direct cook are generally obscured by other variables and thus pass by unnoticed in most operations.

¶ Foremost is the effect of the changes caused by variations in acid concentration. Once accurate control of heating is accomplished, changes in acid concentration as expressed by the sulphurous acid constituent will play an important part, principally affecting the rate of digestion. Changes in the base constituent seriously affect the pulp color as well as other quality and economy factors, and the ratio of base to acid constituents can affect many characteristics.

¶ Several means for adjusting the digester operation can be used to compensate for changes in acid but none were found to be too desirable from the economic and practical point of view. It is much more satisfactory to introduce features in the acid making process which permit control of this phase of the process.

¶ Such developments as a means for the removal of the inert digester gases from the acid plant to eliminate the effect of these gases and permit improved control over the sulphur burning and raw acid making process; means for the adjustment of the base and fortification of the raw acid; and finally the important requirement of storing the prepared cooking liquor under proper conditions. The latter also provides the important benefits contributed by the Chemipulp Hot Acid system.

¶ All of these developments are designed to eliminate the seasonal effect, which in some plants is of major importance, and since they are essential to the maximum in economy and quality, are an important and valuable part of an efficient sulphite plant.

¶ One of the final stages in the reduction of the variables is the reduction of wood character to the most uniform controllable condition. Basic wood differences are, of course, almost impossible to adjust but with a certain steam treatment, or other pretreatment method, some of the major variables are reduced to a state of practical uniformity. This treatment not only provides conditions which permit the chips to accept the acid treatment in a greatly improved manner, but also makes possible the addition of a greater quantity of wood which, when combined with proper heat distribution, results in a larger pulp production per unit of digester volume, with the benefits attendant upon such an increase. This treatment tends to reduce the wood variables to the factors of natural growth which obviously do not fall within the realm of plant control.

¶ The culmination of many years of experiment and development are embodied in the Sulphite Pulping service now made available to the trade by Chemipulp Process, Inc. Only by proper application of basic principles and knowledge can the problems involved in sulphite pulping be brought to an efficient solution. Long experience in the introduction of circulation and control in plants of various types has provided a background which permits the attainment of the maximum in pulping efficiency.

This completes the description of the Chemipulp-KC digester circulation systems. First portion was in preceding issue of this magazine.

★ This article is the sixth of a series being published by Chemipulp Process Inc. in PULP & PAPER magazine in the interest of generally improving the sulphite process. Correspondence regarding or discussing the articles will be welcomed.

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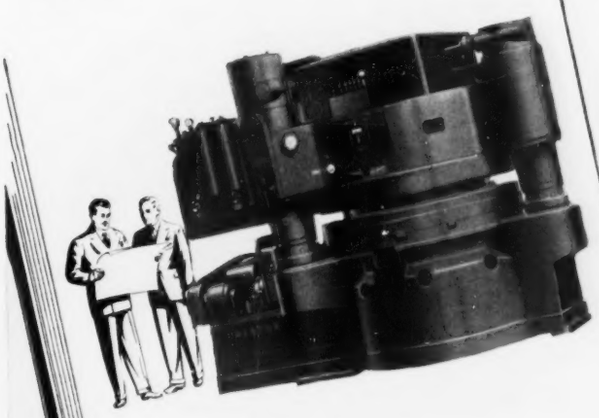

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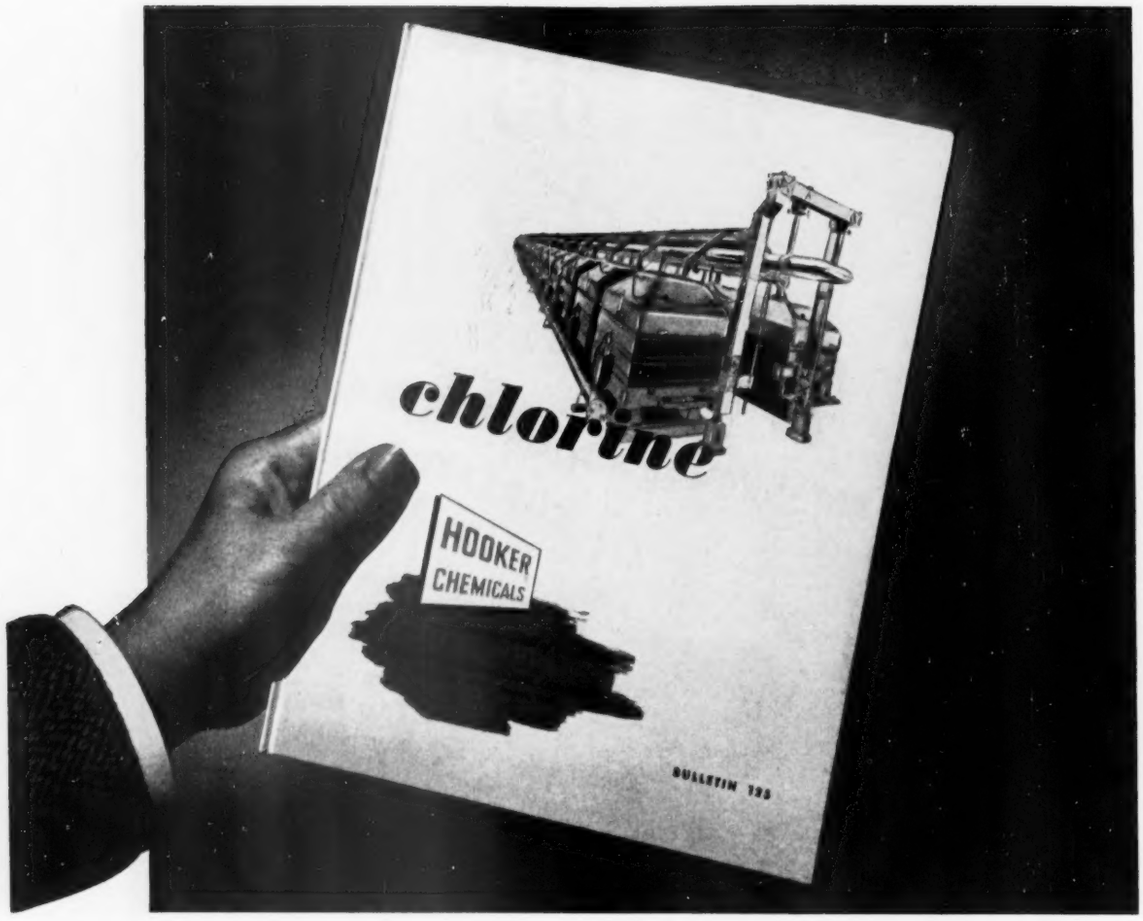

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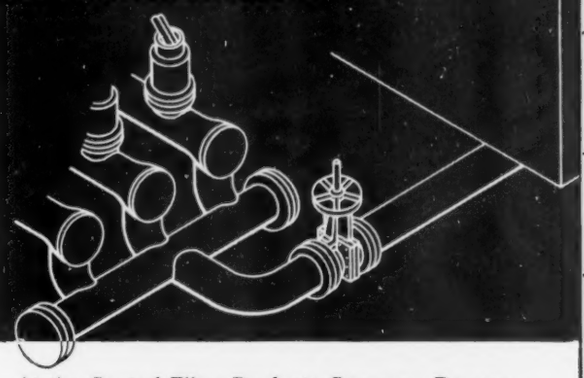
2-739

Pulp No Problem with this Valve ...on Stock Pumps, for instance

THE INSTALLATION



At the Central Fibre Products Company, Denver, Colo., paper box board mill, using Crane Pulp Stock Valves on stock pumps to paper machines.

VALVE SERVICE RATINGS

SUITABILITY:	Best on every count
FEATURES:	Seats tight through pulp fibers
MAINTENANCE COST:	Zero—no attention needed
SERVICE LIFE:	Installed 1946—good as new
OPERATING RESULTS:	Stopped shutdowns for valve cleanouts
AVAILABILITY:	Regular stock item—No. 1425

THE CASE HISTORY

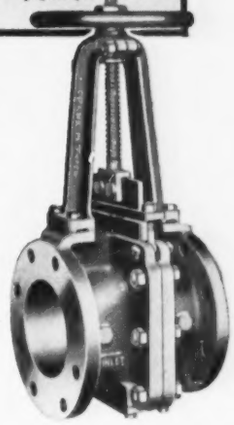
Valves formerly on the pumps were leaking constantly, flooding the machine area, making floors messy, unsafe. They burdened production with all-too-frequent forced shutdowns for cleanouts.

Trouble was the valves couldn't be seated; pulp fibers trapped under the disc, jammed them and prevented closure. Pulp would also clog up body and bonnet to make the valves inoperable.

These wasteful conditions disappeared completely in 1946, when Crane Pulp Stock Valves were installed. With not a penny's maintenance since, valve operation has remained smooth, positive, and with no leakage. Plant gives full credit to Crane unique design—bonnetless, with shearing-action seating—the thriftiest value in pulp stock valves.

THE VALVE

It shears its way to seat tightly through pulp fibers. Its knife-edge disc can't get jammed. It's bonnetless; body has no pockets where pulp can build up and clog operation. It's self-cleaning. That's what makes Crane Pulp Stock Valves such outstanding low-cost performers in pulp and paper processing. See your Crane Catalog, or your Crane Representative.



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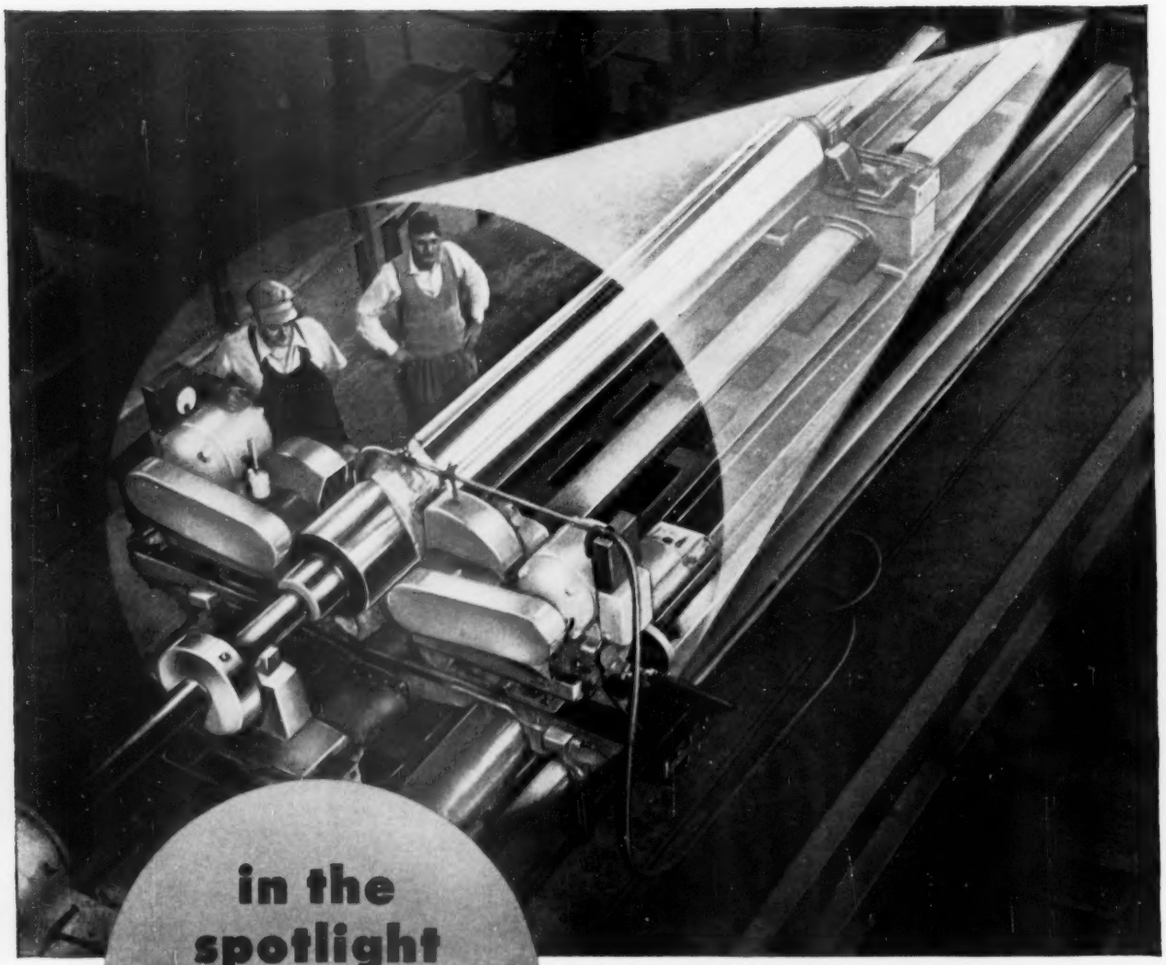

in the spotlight

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G.H.V. 42" ROLL GRINDER

The vast and recently completed expansion program of Weyerhauser Timber Company, Longview, Washington, includes a LOBDELL Type GHV Roll Grinder along with many other fine items of equipment . . . for greatly increased production. And LOBDELL Roll Grinders, a design available for *every* need, are exactly "The Grinders" to facilitate today's stepped-up production standards.

Due to earth conditions, the Type GHV in this case was mounted on a Korfund spring isolated foundation.

LOBDELL Roll Grinders—two types: GHV with alternating current, constant speed motors; CW with direct current, variable speed motors. Completely automatic. Low Head Wheel Carriage, patented Infeed Mechanisms and Automatic Crowning Device assure greater accuracy and higher degree of finish on your rolls. Rugged, dependable, simple . . . and accurate to .00025" for parallelism and concentricity. LOBDELL grinders can do *your* job.

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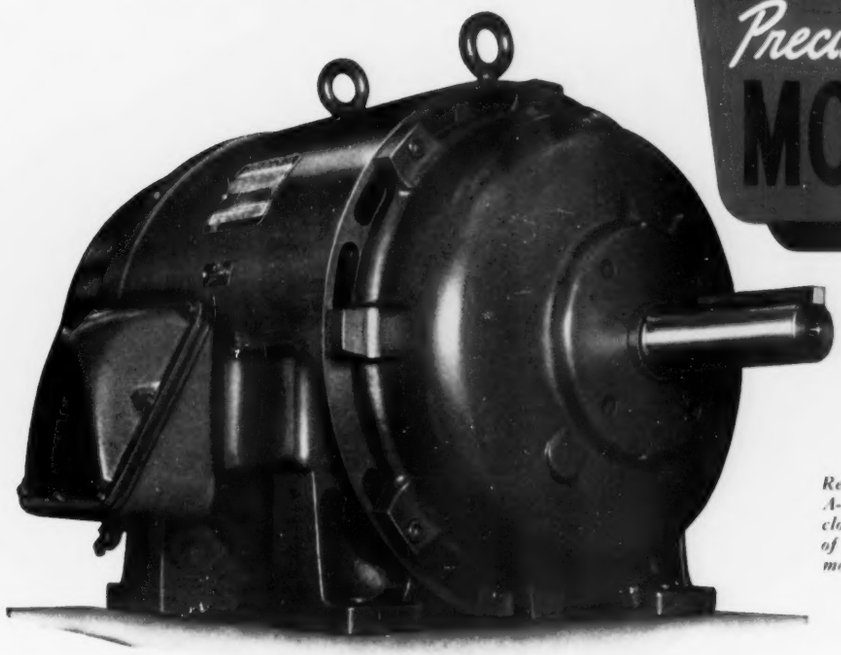
FOR RUGGED SERVICE...

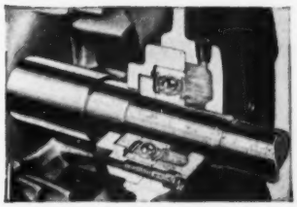
"All motors are NOT alike!"

RELIANCE
Precision-Built
MOTORS



Reliance Totally-enclosed Fan-cooled A-c. Motor. All other standard enclosures available, with wide choice of mechanical designs and special mountings. Ratings from 3/4 to 300 hp.

- ☆ Heavy shafts, bearing to bearing
- ☆ Indestructible pressure-cast rotors
- ☆ Shock-resistant frame and bearing-bracket construction



. . . AND THE BEST PRE-LUBRICATED BEARING DESIGN

The Reliance pre-lubricated bearing provides *four times more operating hours without re-lubrication* than any other bearing used in motors today. And—whatever your lubrication schedule—*you just can't grease 'em wrong!* To get the complete "inside story" on motor bearings, write today for Bulletin B-2201. It contains hard facts on the advantages of the Reliance pre-lubricated bearing design, with cutaway view, cross-section diagram, comparison chart, and statements by bearing manufacturers. B-1458-J

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Since their introduction less than two years ago, Masoneilan 60000 Series Controllers have won wide acceptance through superior performance, great versatility, and simplicity of adjustment and operation. We believe that you, too, will like these "Instrument Man's Instruments" once you have seen them.

The Proportional-Reset Controller
Note that all settings are accessible without removing chart.

A HIGH Cq (Quality Coefficient) PRODUCT

Pneumatic Controller Advantages?

Consider versatility for example. In *one* instrument you can obtain *all* these...

ON-OFF CONTROL
simply by setting the Proportional Band Wheel to minimum proportional band — like ← this. Action may be either direct or reverse.

DIFFERENTIAL GAP CONTROL
by turning the Proportional Band Wheel to the "Gap" quadrants, either direct action like ← this or reverse action like this →

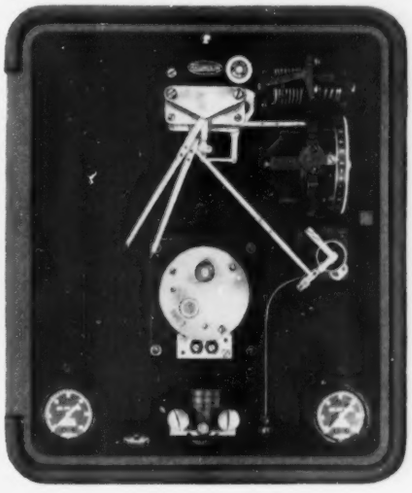
PROPORTIONAL CONTROL
by setting the Proportional Band Wheel to the required proportional band in the direct action quadrant like ← this or the reverse action quadrant like this →

Reset Unit

Proportional Unit

PROPORTIONAL-RESET CONTROL
by substituting the Reset Unit for the Proportional Unit. No piping changes — you simply plug in the unit, realign (one adjustment), turn Proportional Band Wheel to desired direct or reverse action quadrant, and set required reset rate.

Or if versatility is not important to you, consider these advantages to the Instrument Man—



PILOT — of amplifying, balanced type is easily serviced because of its simple construction and cleanable orifice.

MANIFOLDED AIR PASSAGES — with plug-in connections, eliminate pressure fittings and clutter of tubing; facilitate interchangeability of individual subassemblies and accessibility of adjustments.

NOZZLE — is *easily* removed, cleaned, replaced and calibrated.

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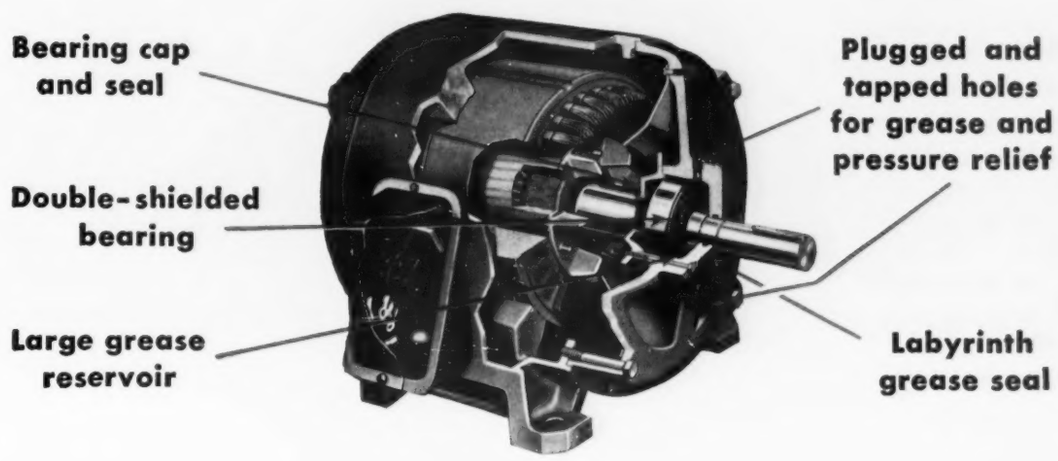
Here Are Facts You Should Know About Electric Motor Bearings

An ideal motor bearing would operate for indefinitely long periods under all types of conditions without requiring any attention whatever. However, in the opinion of our engineers, such a bearing and its attendant lubricant are not yet available on the commercial market. Consequently, bearings for many types of operations, particularly where overloading, extreme temperature ranges and chemical and dirt laden atmospheres are involved, require special lubricants or regular lubrication schedules.

Of course, bearings suitable for many kinds of operation under normal conditions can be built to require no attention for very long periods — usually several years. Allis-Chalmers can supply sealed bearings in all frame sizes through 505 on short delivery and without extra cost for applications of this type.


Bearing cap and seal
Double-shielded bearing
Large grease reservoir
Plugged and tapped holes for grease and pressure relief
Labyrinth grease seal

Which is the Best Design for *Your* Application?

We believe that the design used in standard Allis-Chalmers drip-proof, tefc and explosion-proof motors represents the best design for most industrial users.

The Allis-Chalmers standard design consists of a pre-lubricated, double-shielded bearing mounted in the end housing with a generous grease reservoir. Plugged and tapped holes are provided for grease and for pressure relief. Under normal operating conditions, this design will operate as long without attention as any other type of bearing in use today. But where difficult operating conditions make re-lubrication desirable, it can be done as part of the normal lubricating-routine without dismantling the motor.

The large grease reservoir and shielded bearing design assure that grease lost from the bearing due to high operating temperatures or other causes will be replaced automatically.

For further information on bearing design and other features of Allis-Chalmers motors, call your nearby Allis-Chalmers District Office or Authorized Distributor. A-4130

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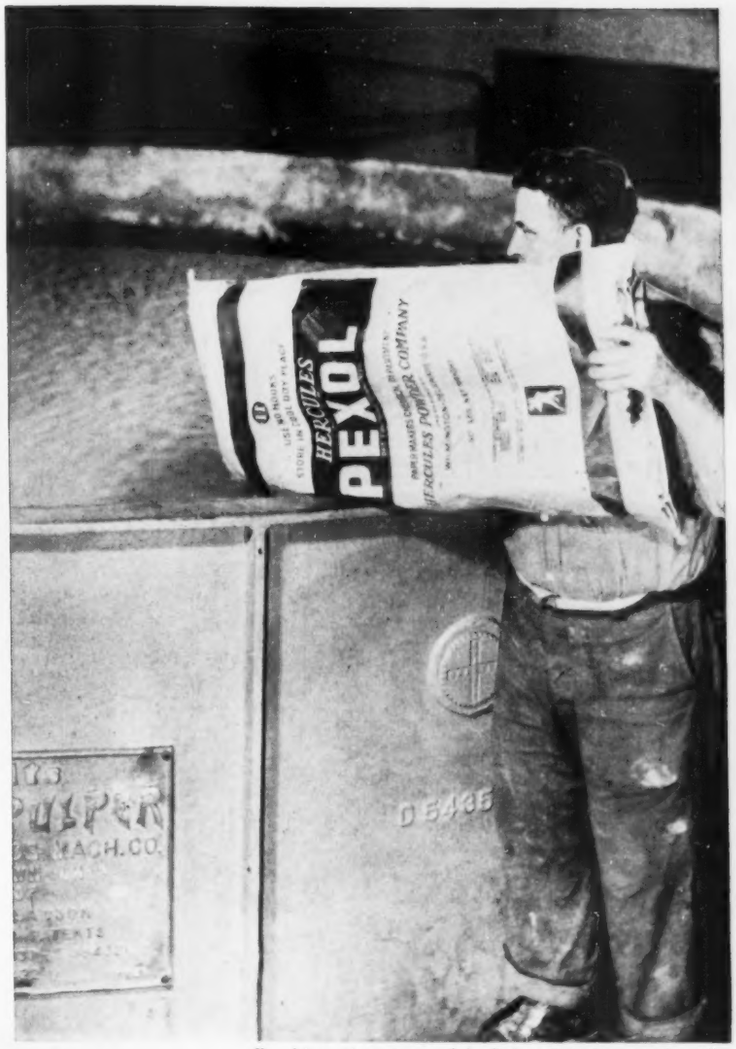
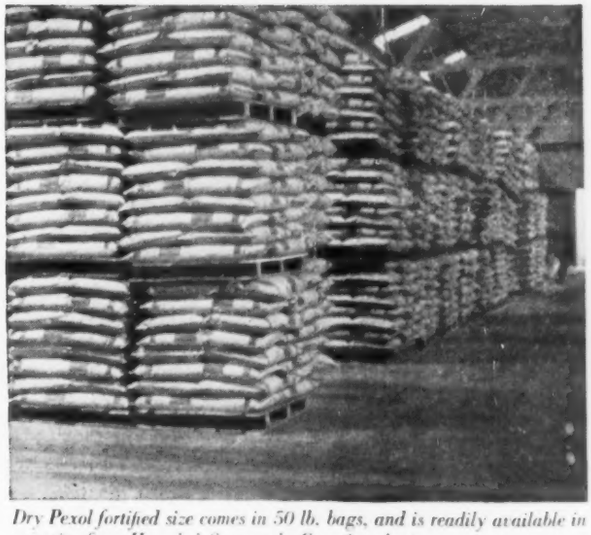
HOW TO REDUCE HANDLING COSTS AND IMPROVE SIZING TESTS

Pexol* Cuts Size Furnish 30-50%



Pexol in action at one of the Robert Gair Company's mills.



Dry Pexol fortified size comes in 50 lb. bags, and is readily available in quantity from Hercules' Savannah, Georgia, plant.

*TRADEMARK

More and more paper and board mills report remarkable reductions in size furnish, and substantial savings in size costs, since switching to Dry Pexol fortified size. Cuts in size requirements of 30 to 50% are common. Sizing tests have been maintained and often noticeably improved. By using less size, these mills also have been able to reduce inventories and lower freight and handling costs.

Get your share of these important savings by getting in touch with Hercules now. The leader in fortified sizing materials, Hercules welcomes the opportunity to place its technical staff at your disposal.

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PP535

a LONG stride forward...

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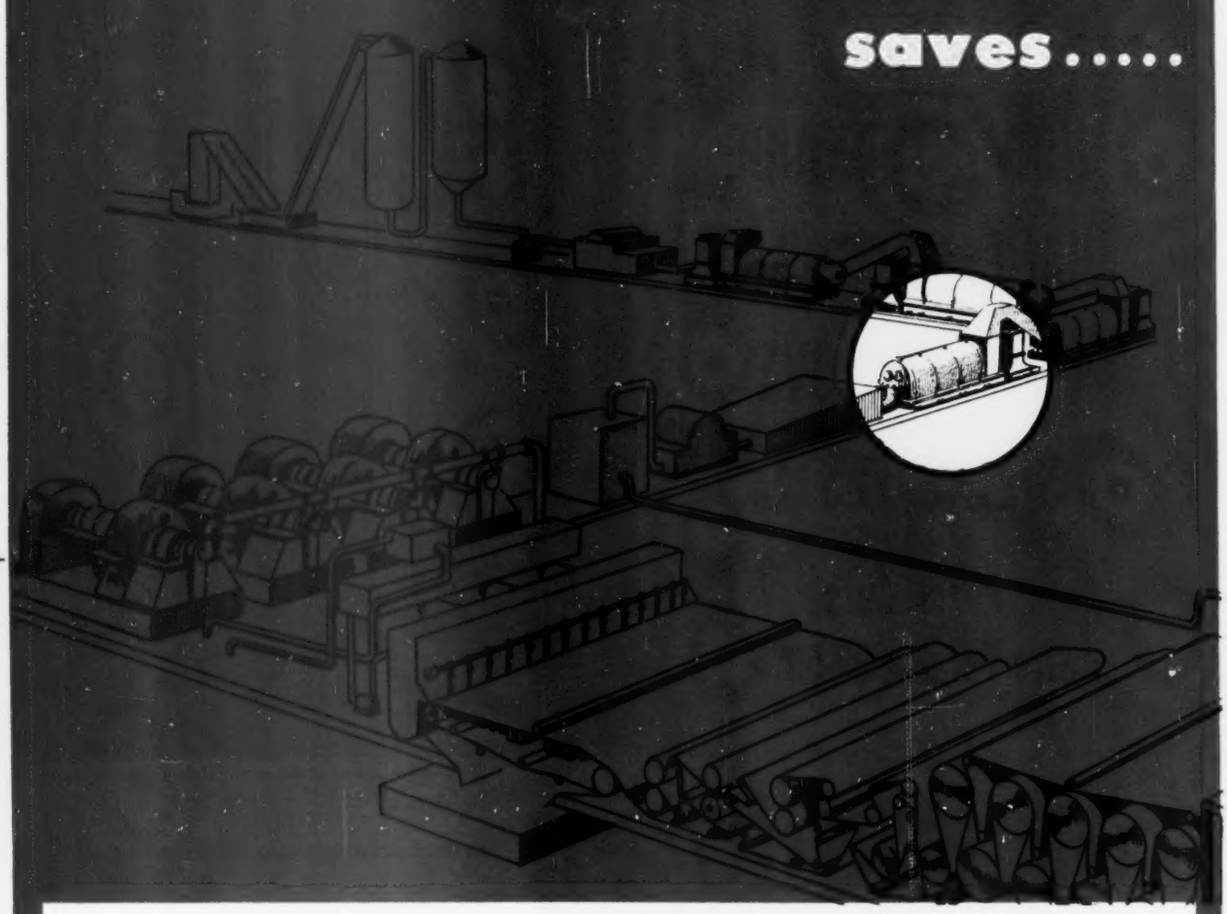
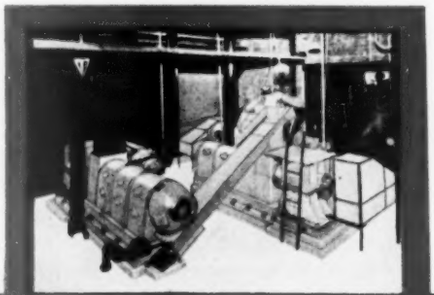


Photomicrograph of diffuser washed kraft pulp.

Press units installed in leading southern kraft mill.



Photomicrograph of pressure washed kraft pulp. Note curling of fibers.

SUTHERLAND PRESSURE WASHING SYSTEM

....chemicals, heat, water, power, space...

increases operating efficiency

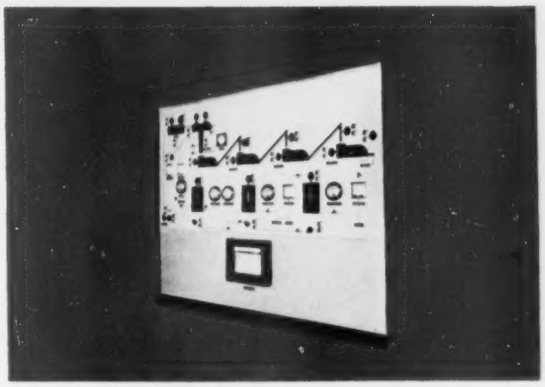
Based on a counter-current principle of washing in a series of specially designed presses, the *Sutherland Pressure Washing System* represents a real advance over other washing systems . . . real profit to the mill owner.

OPERATION

Pulp is pumped from a conventional blow tank at 3-5% moisture free consistency and thickened to twelve percent in an underpass thickener. Fed into the presses, it is alternately squeezed to about 36 to 38 percent dry and then diluted about 12 to 14 percent with liquor from the succeeding press. The strong liquor draining from the thickener is sent to the evaporators of the recovery system.

THE RESULTS:

1. *Water Consumption:* for a 300-ton system less than 200 g.p.m.
2. *Heat:* since pressure is used instead of vacuum, better blow-heat recovery results . . . evaporators get the black liquor at higher temperatures . . . no flashing of steam because of absence of vacuum.
3. *Power Requirements:* only 1.71 horsepower per air-dry ton for a four stage system.
4. *Chemical Recovery:* positive squeezing action insures uniform separation of liquor from pulp, higher yield. Even true knots lose much liquor in the operation.
5. *Pulp Quality:* intense rubbing action and pressure contribute to strength development of pulp. Positive curling of the fiber is a characteristic of pressure washed pulp.
6. *Space:* considerable space saving results from fact that presses are of compact design and may be arranged in a variety of ways to suit requirements of the individual mill. High consistencies and foam free operation obtained from system means that over-size transfer and settling tanks are not necessary.
7. *Control:* entire system is operated from a *single* panelboard, permitting easy adjustment of output to mill requirements.



Single Panel provides complete control of process for one operator. Audio and visual alarms signal operator instantly in the event of trouble.

THE ADVANTAGES OF SUTHERLAND PRESSURE WASHING SYSTEMS ARE BEING DEMONSTRATED EVERY DAY IN ACTUAL MILL OPERATION.

SUTHERLAND PRESSURE WASHING SYSTEMS CAN BE FURNISHED IN FOUR AND FIVE STAGES TO FIT THE NEEDS OF THE INDIVIDUAL MILL . . . AT A CAPITAL INVESTMENT APPRECIABLY BELOW THAT OF CONVENTIONAL SYSTEMS.

For more information, write for a copy of "PRESSURE WASHING" which presents a case history of actual mill experience.

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HIGH YIELD SYSTEMS

Sold & Serviced by
SUTHERLAND REFINER CORPORATION

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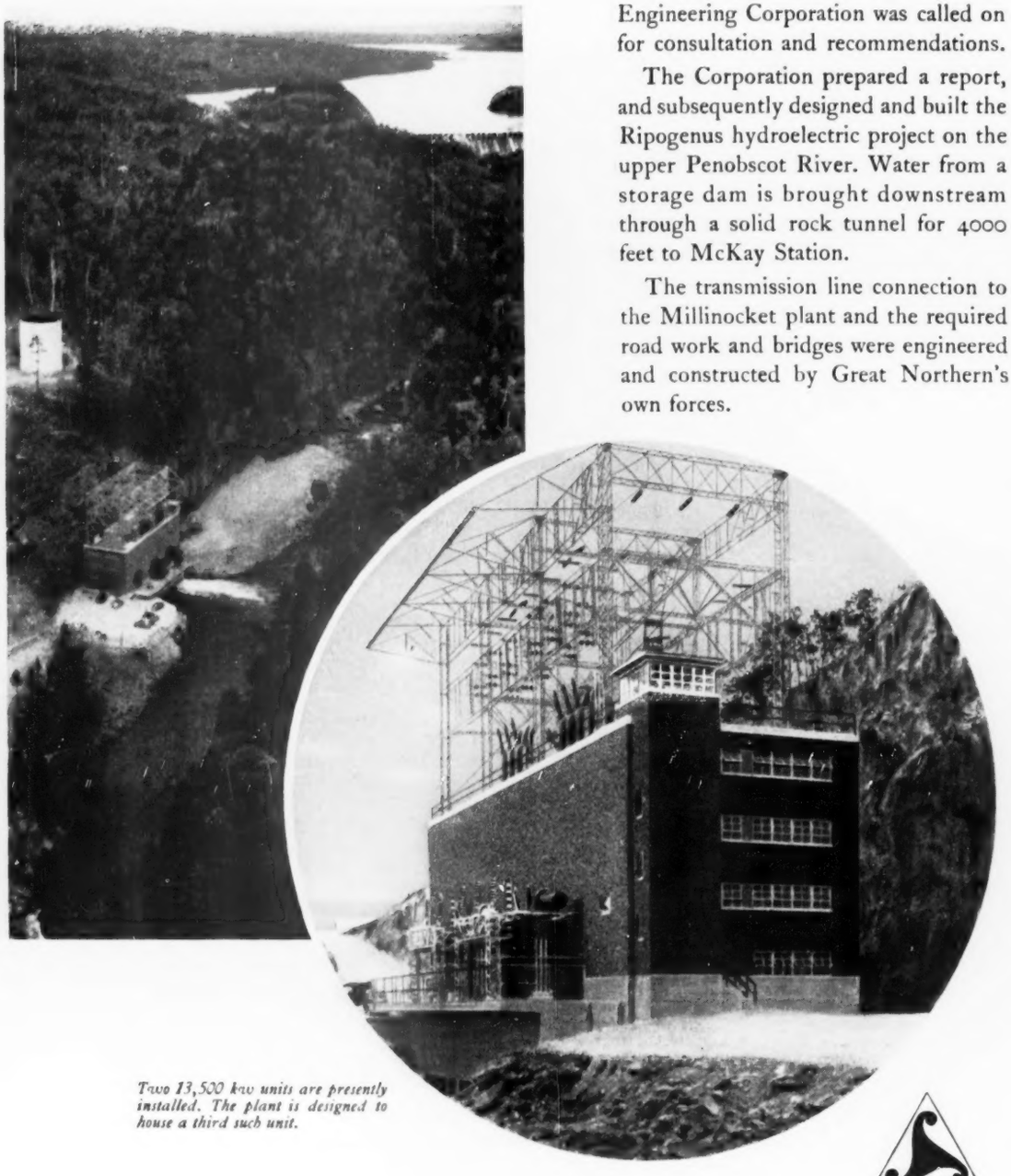
POWER FOR PAPER PRODUCTION

When Great Northern Paper Company needed more power for its operations in northern Maine, Stone & Webster Engineering Corporation was called on for consultation and recommendations.

The Corporation prepared a report, and subsequently designed and built the Ripogenus hydroelectric project on the upper Penobscot River. Water from a storage dam is brought downstream through a solid rock tunnel for 4000 feet to McKay Station.

The transmission line connection to the Millinocket plant and the required road work and bridges were engineered and constructed by Great Northern's own forces.



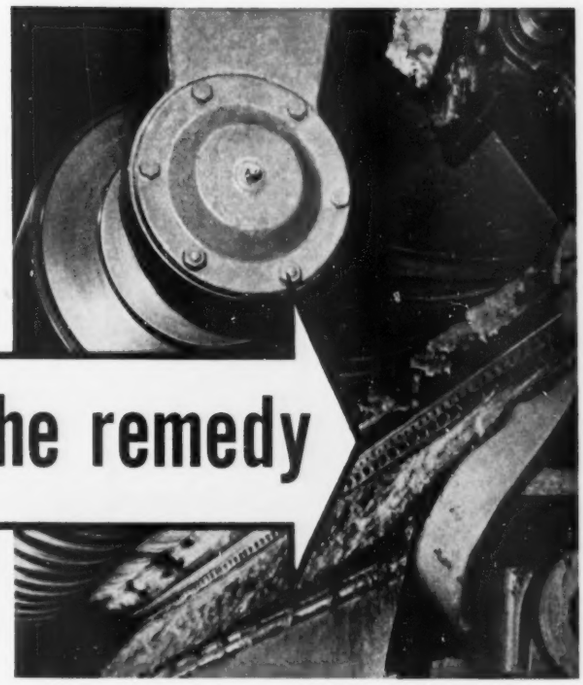
Two 13,500 kw units are presently installed. The plant is designed to house a third such unit.

STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY *of* STONE & WEBSTER, INC.

This doctor has the remedy

for common complaints at the wet end of Fourdriniers



"K" Monel creping doctor on one of the world's largest paper towelling machines. "K" Monel was recommended by the makers of the blade, Lodding Engineering Corp., Worcester, Mass., because of its excellent resistance to corrosion, abrasion and wear.

Do your paper machines suffer from a tired, run-down feeling around the doctor blades?

Fortunately, there's a simple cure for this disease. It means surgery — but the operation is safe and painless. Just remove the old blades and replace with blades of "K"® Monel. It's enough to make any patient feel like a new machine.

And why shouldn't it? Now wear and corrosion, the worst enemies of doctor blade life and performance, are under control.

Bring on your corrosive paper stocks, sours, cleaners and chemicals! Let them try to make headway against these new blades. They find that "K" Monel is stronger and harder than structural steel. That it is highly resistant to corrosion. And that it is non-rusting, too.

"K" Monel doctor blade surfaces stay smooth, and wear uniformly. The blades need less honing, and less regrinding. They avoid pick-up of metallic beads and rust particles that might damage an adjacent roll or contaminate a whole run of paper.

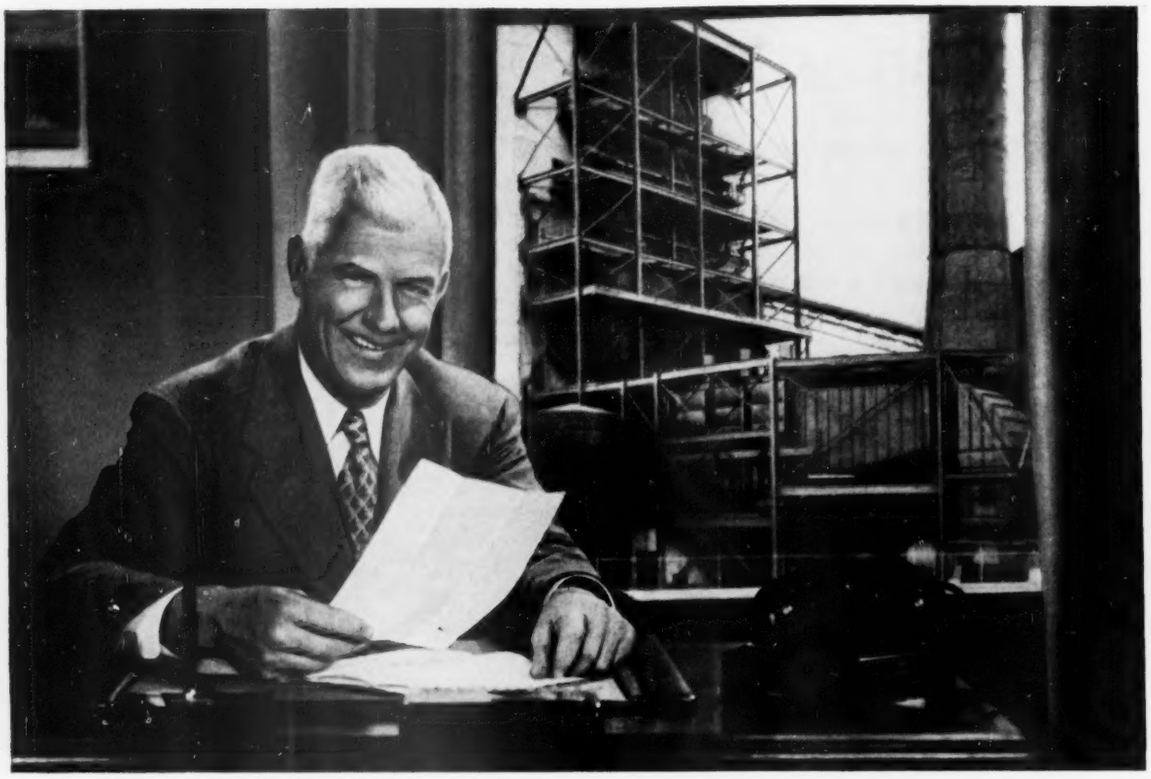
Keep "K" Monel in mind wherever corrosion-resisting, long-wearing doctor blades are required. And remember its companion Inco Nickel Alloy, Monel®, for calender rolls, roll covers, scrapers, save-alls and winding wire.

It is advisable to place equipment orders, as approved by N.P.A., with your supplier well in advance of scheduled use. Distributors of Inco Nickel Alloys can supply the latest information on availability from warehouse and mill. And we'll be glad, of course, to tell you more about how "K" Monel blades can "doctor" a specific problem on one of your paper machines. Just write us.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

Inco Nickel Alloys

MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL • "S"® MONEL
INCONEL® • INCONEL "X"® • INCONEL "W"® • INCOLOY®
NIMONIC® ALLOYS • NICKEL • LOW CARBON NICKEL • DURANICKEL®



"Our community's given us a *clean* bill of health!"

"FRANKLY, our plant's discharge gases used to set the community's teeth on edge and we began to run afoul of local ordnances.

"So, when we saw how effectively Koppers-Elex Electrostatic Precipitators have cut material losses and built public goodwill for many firms like ours, we decided to go ahead with our own installation. And our experience has proved it to be one of the most profitable investments we've ever made."

Koppers-Elex precipitators are specifically designed to solve three important gas-cleaning problems confronting industries *all over the world:*

FIRST—recovery of valuable materials entrained in process gases.

SECOND—cleaning of gases for subsequent re-use.

THIRD—control of discharge gases within the limits set by nuisance abatement laws—vital in maintaining good public relations in industrial communities.

Koppers precipitators can work at almost 100% efficiency . . . and operate *continuously*, too. Koppers multiple-chamber design permits the gas-cleaning operation to continue uninterrupted in one chamber while another is undergoing inspection or repair.

Koppers-Elex precipitators are designed, engineered, fabricated, erected, and guaranteed under one contract by the Koppers Company. For analysis and recommendations relating to your operation, submit details without obligation to: KOPPERS COMPANY, INC., *Precipitator Department*, 340 Scott Street, Baltimore 3, Maryland.

GUARANTEE: All Koppers-Elex precipitators are guaranteed to meet your specifications for efficiency or residual content.

KOPPERS®

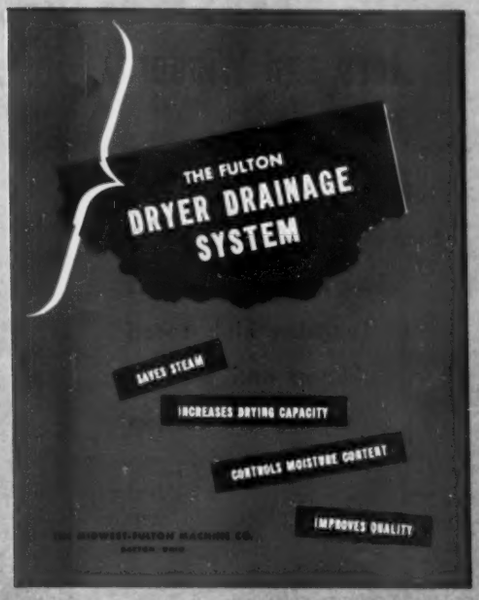
-Elex ELECTROSTATIC PRECIPITATORS

METAL PRODUCTS DIVISION • KOPPERS COMPANY, INC., BALTIMORE 3, MD.

Engineered Products Sold with *Service*

This Koppers Division also supplies industry with Fast's Couplings, American Hammered Industrial Piston and Sealing Rings, Aeromaster Fans, Gas Apparatus.

YOUR COPY AWAITS



STANDARD EQUIPMENT WITH ALL MACHINE BUILDERS

Everything the operator of older mills wants to know about Fulton Dryer Drainage is in this folder—how to obtain:

- *Proper graduation of dryer temperatures.*
- *A uniformly dried sheet regardless of machine speed.*
- *Automatic control of drying under all conditions.*
- *Less broke—less shrinkage—less cockling—less hardening.*
- *A 5% to 20% saving on steam.*
- *10% to 30% more drying capacity.*

If your copy of this technical Fulton Dryer Drainage booklet is not at hand, by all means ask for another copy.

The great majority of dryer sections are F.D.D. equipped. If yours is not, it is high time to act.

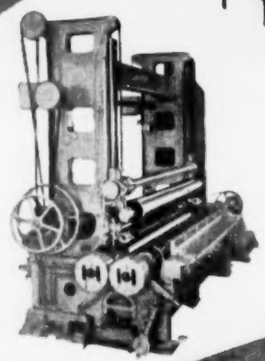
MIDWEST-FULTON

MIDWEST-FULTON MACHINE COMPANY • DAYTON, OHIO

LANGSTON
Slitters and Winders

Heavy cast iron bedplate and heavy cast iron side frames contribute to ruggedness and long life, enabling users of Langston high speed Slitters and Winders to turn out top quality rolls.

Samuel M. Langston Co.
CAMDEN, N. J.



SELF-DOCTORING TOPRESS ROLLS

rubber covered by GRIFFITH OF PORTLAND

THE MOST ADVANCED DEVELOPMENT IN RESILIENT ROLL COVERINGS SINCE THE INTRODUCTION OF RUBBER COVERED SUCTION ROLLS

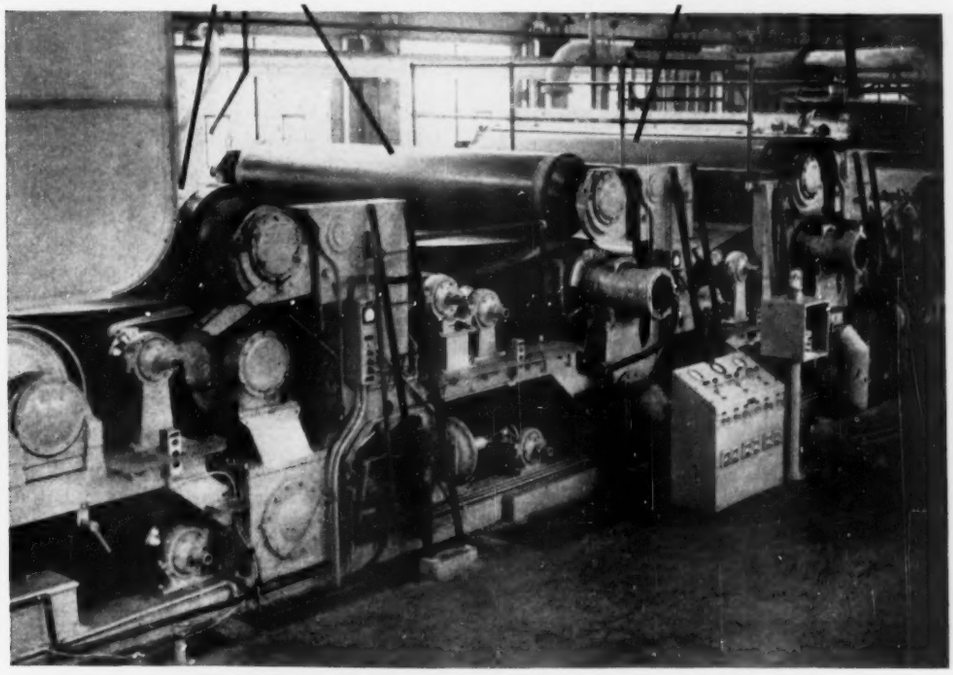
The Self-Doctoring Topress rolls covered by GRIFFITH will not pick the sheet because a special improved rubber cover compound is used. Breaks in the sheet contacting the Topress Rolls are eliminated. Doctor Blades may be entirely removed from the machine—or their use discontinued.

With the installation of GRIFFITH Self-Doctoring Topress Rolls on an open top press, you gain the advantage of resilient rolls of the hardness required for best operation. This gives better water removal at higher speeds, plus much longer felt life.

Three GRIFFITH covered S.D.T. Rolls are used on Weyerhaeuser Timber Company's 400-ton-per-day machine at Springfield, Oregon, running at 1,200 ft. per minute.

SECOND & THIRD PRESSES—GRIFFITH covered Self-Doctoring Topress Rolls with Doctor Blades and Holders permanently removed from machine.

FIRST PRESS—GRIFFITH covered Self-Doctoring Topress Roll with Doctor Blade off the roll.



WRITE, WIRE OR TELEPHONE FOR AN ESTIMATE ON YOUR JOB

Griffith RUBBER MILLS

2439 N. W. 22nd AVENUE
***PHONE:* BEACON 7126**
PORTLAND, OREGON

WESTERN INDUSTRIAL RUBBER SPECIALISTS SINCE 1911

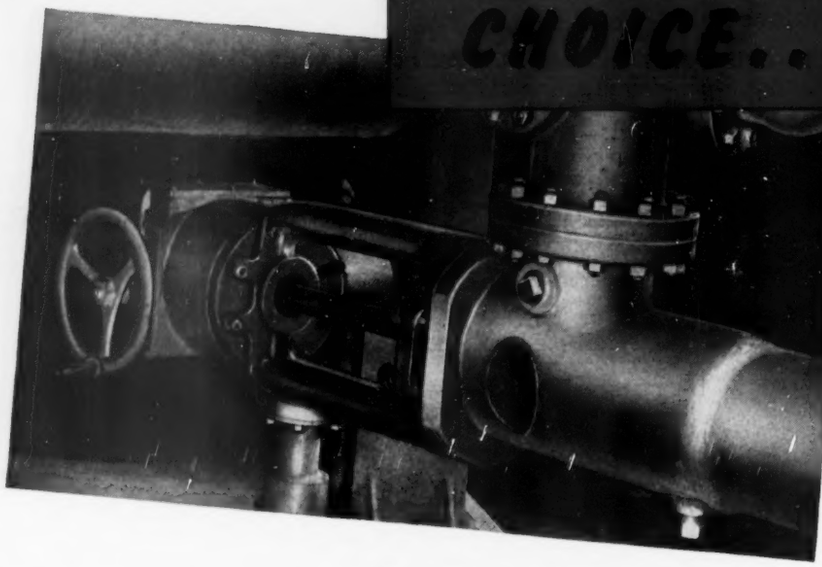
HYDRAULIC-OPERATED

Yarway Digester Blow Valve—one of six installed at large North Carolina paper mill.

TAKE YOUR CHOICE...

MOTOR-OPERATED

Yarway Digester Blow Valve—one of eight installed at large Canadian paper mill.



You can choose between hydraulic-operation and motor-operation when you specify Yarway Digester Blow Valves. Both combine all the following Yarway advantages:

- Remote control, usually from above, on the operating floor.
- Tight shut-off. Effective sealing under full digester pressure. Saves cooking liquor. Insures thorough pulp cooking.
- Free discharge. No pockets. Full discharge with minimum pressure drop. Digester blows clean.
- Rugged construction. Built to withstand shock and wear of toughest service.
- Modern metallurgy—such as sliding plunger of hardened stainless steel and sleeve of chromium nickel—resists wear and chemical action.

For full details, write for Yarway Bulletin B-440.

YARNALL-WARING COMPANY
103 Mermaid Avenue • Philadelphia 18, Pa.
Branch Offices in Principal Cities

YARWAY

DIGESTER BLOW VALVES

Here's the BRIGHT Idea

use

Paper White RB

the colorless dye that gives the highest "optical" brightness to paper

Paper White RB has an exceptional ability to convert incident ultra-violet light to visible light which is *added* to the light reflected from the paper. From the ultimate reader's point of view, this enhanced reflectance produces an ocular sensation that can best be described as "whiter-than-white." In any type of application . . . beater dyeing, surface coloring, dip-dyeing of light weight stock, or coating whites and pale tints . . . Paper White RB sets new standards of brilliance. Also, where bleaching is uneven, Paper White RB will bring the paper up to a uniform high-whiteness simply by adding the proper amount. Another feature is stability of shade of papers containing Paper White RB on storage in either acid, neutral or alkaline atmospheres.

Samples and technical assistance on the use of Paper White RB are available on request.

gdc ANTARA

ANTARA CHEMICALS

(Division of General Dyestuff Corporation)

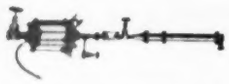
435 HUDSON STREET · NEW YORK 14, NEW YORK

SALES OFFICES: New York · Boston · Providence · Philadelphia · Charlotte, N. C. · Chicago · Portland, Ore. · San Francisco

IN CANADA: Chemical Developments of Canada Limited, Montreal

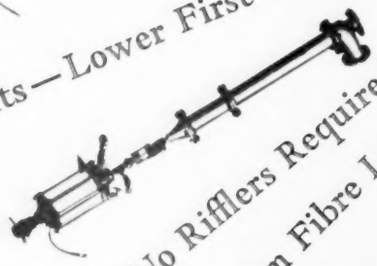
VORTRAPS

. . . Best by Test From any Angle



Lower H. P. Requirements

Fewer Units—Lower First Cost



No Rifflers Required

Minimum Fibre Losses

Lower Maintenance Costs

Wide Fields of Application

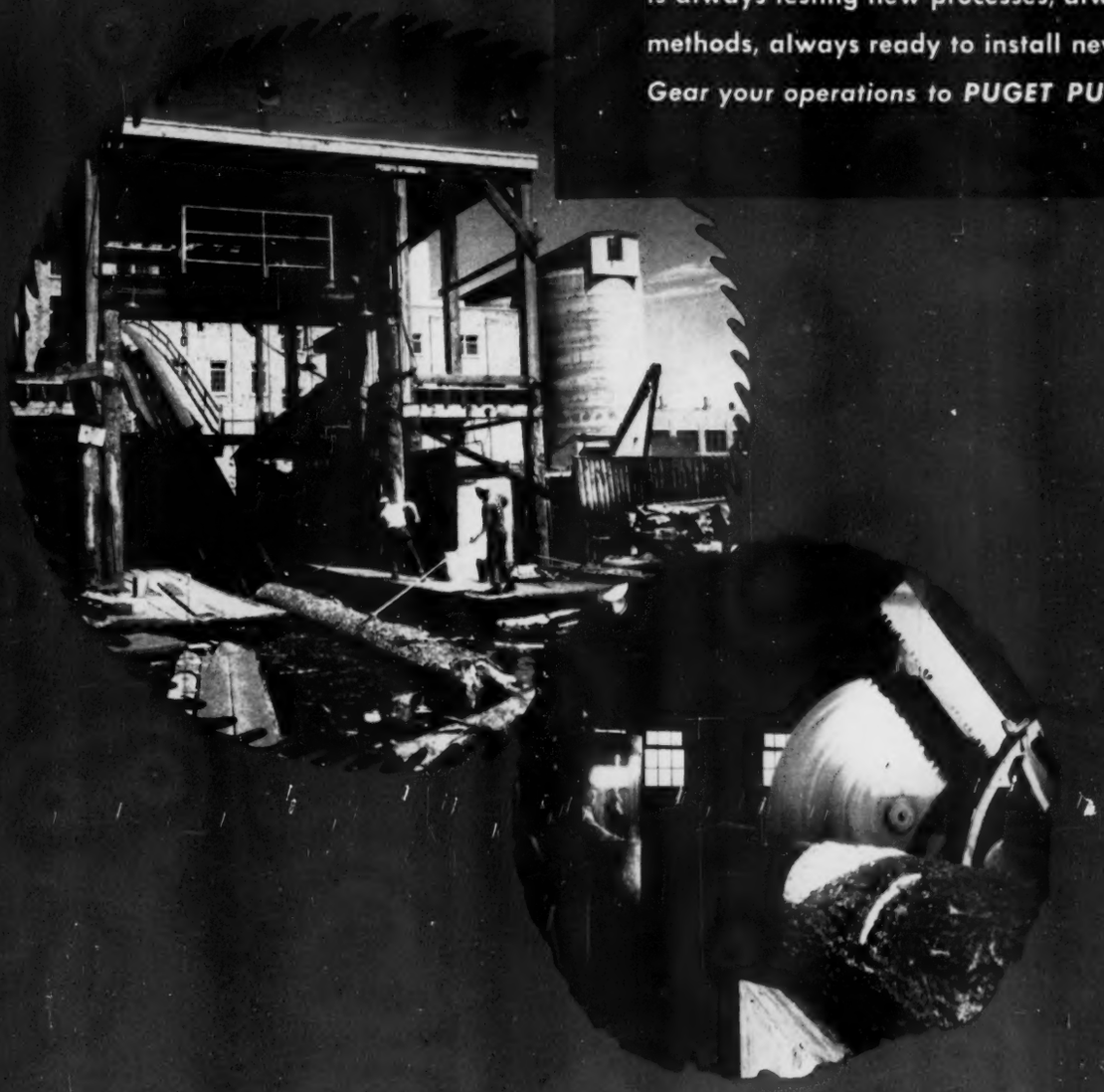
Backed by 15 years Experience

Vortrap superiority in the stock cleaning field has again been proved in recent side-by-side tests.

NICHOLS
Engineering & Research Corp.
70 PINE ST., NEW YORK 5, N. Y.
40 S. Los Robles Ave., Pasadena 1, Calif.
1477 Sherbrooke St. W., Montreal 25, Canada

Representatives:
H. E. Ingalls, 25 Commerce St., Portland, Maine
Douglas Robbins & Co., 505 Federal Savings & Loan Bldg., Middletown, Ohio
A. H. Lundberg, 308 Orpheum Bldg., Seattle, Wash.

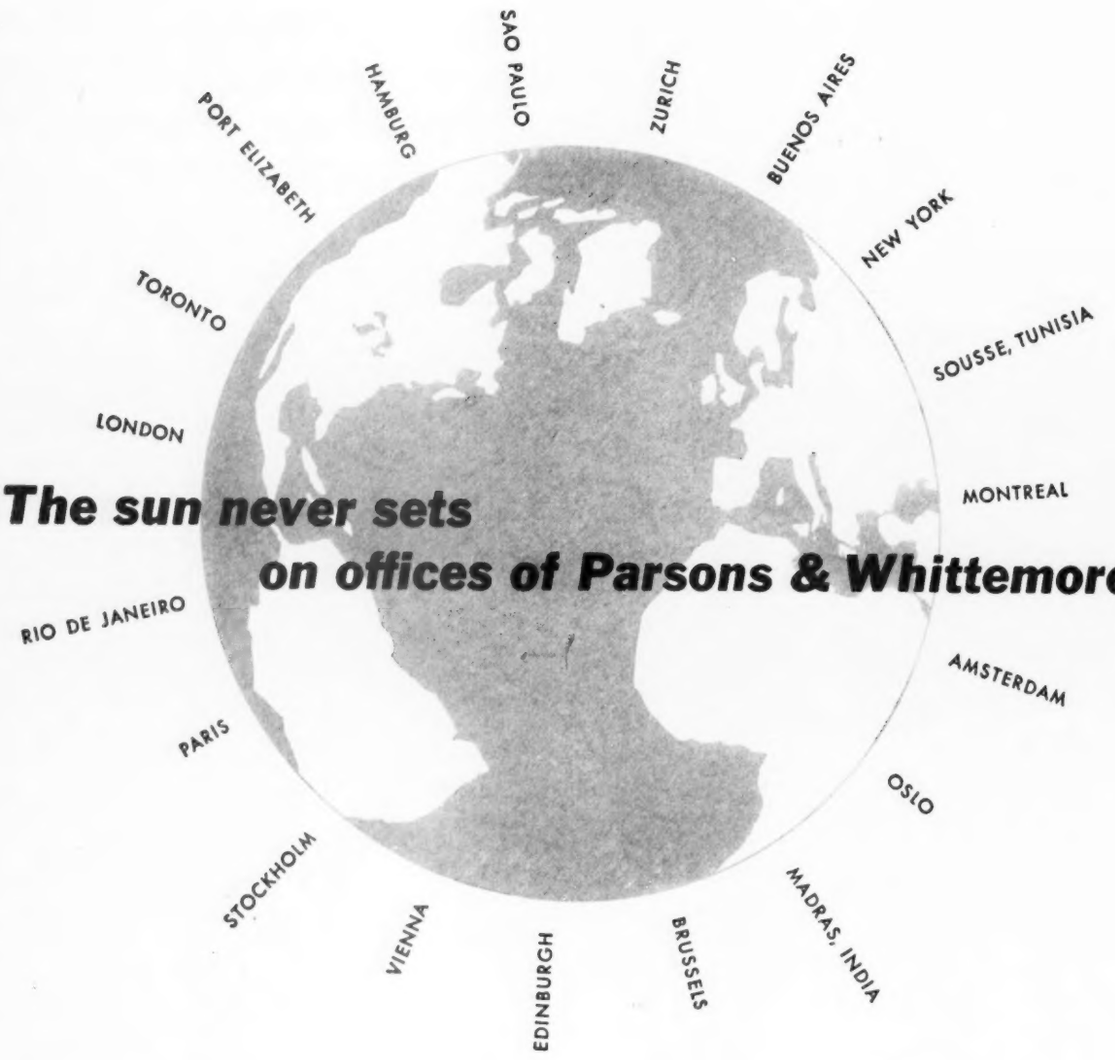
PUGET PULP—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to* ***PUGET PULP.***



PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM • WASHINGTON



The sun never sets on offices of Parsons & Whittemore

***for* pulp**
paper
paper-making machinery
graphic machinery

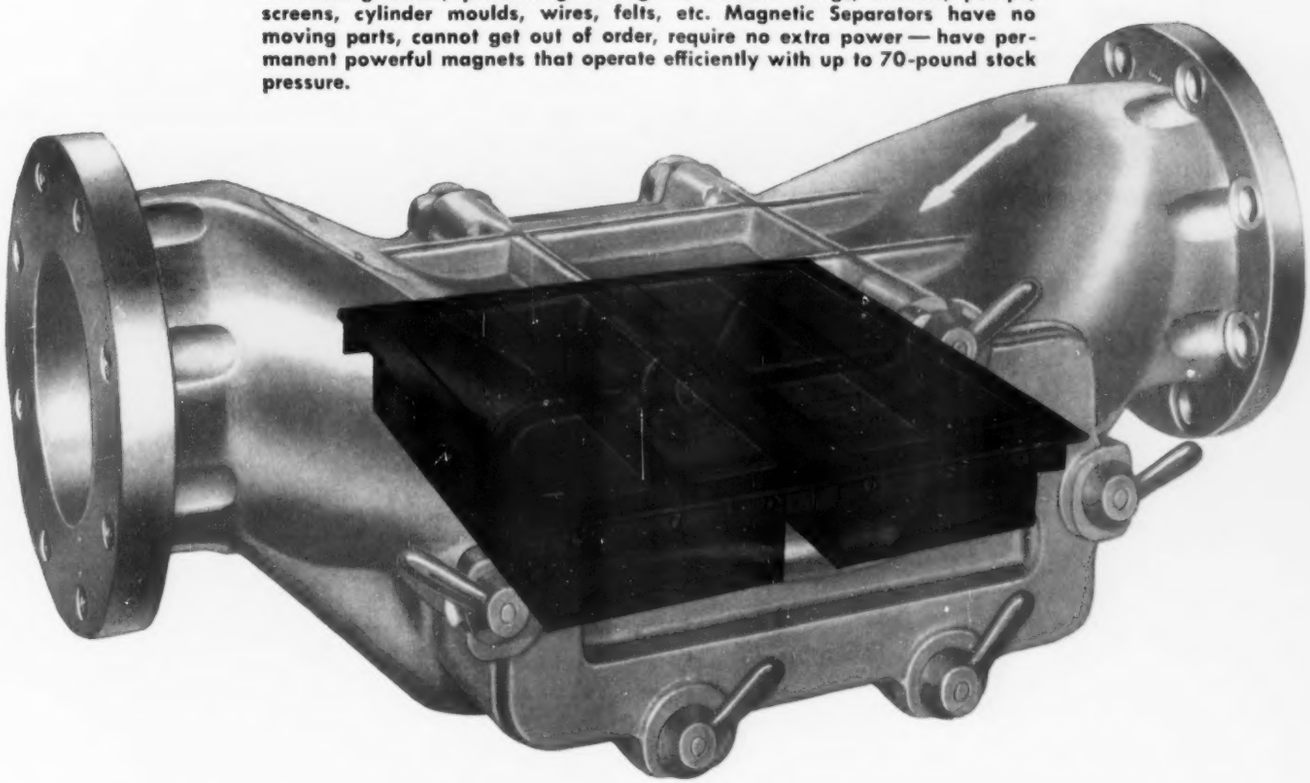
100TH ANNIVERSARY

LYDDON & CO., 35 New Bridge St., **London EC4, England**

PARSONS & WHITTEMORE, 250 Park Ave., **New York 17, N. Y.**

Emerson Magnetic Separators *Trapped!*

Emerson Magnetic Separators improve stock conditions IN ANY MILL by eliminating metal, preventing damage to Jordan fillings, refiners, pumps, screens, cylinder moulds, wires, felts, etc. Magnetic Separators have no moving parts, cannot get out of order, require no extra power — have permanent powerful magnets that operate efficiently with up to 70-pound stock pressure.



Simple to Install Emerson Magnetic Separators for any stock line are equipped with 125-pound class standard cast iron pipe flanges for easy installation. Stocked in 6", 8", 10", 12" and 14" pipe sizes.

Easy to Clean Unscrew hand bolts (provided), remove cover, and plates may be either removed or left in the housing for cleaning. Many mills have adapted parallel Separator installations to permit cleaning with no interruption to stock flow.

Built to Last Magnets are cast of Alnico #5, and enclosed in stainless steel boxes, thus preventing any contact of the magnet with other material. Pole pieces are of magnetic steel. After plates pass rigid Emerson plant tests for pulling and holding strength, they retain these qualities indefinitely.

Designed for Efficiency Stock is directed into Emerson Magnetic Separators at an angle to the plates, thinned and fanned out, all within range of the magnetic field, then flows to the outlet without restriction.

Available also

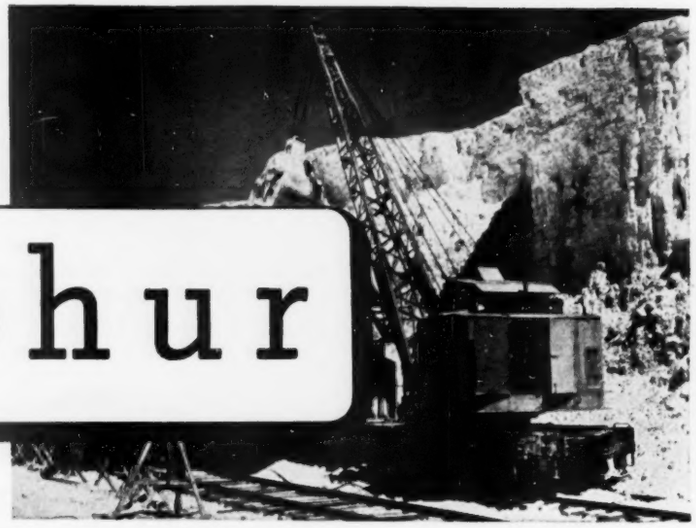
(a) The New Emerson Magnetic Separator Trap for extremely difficult separating problems, such as high stock velocity or heavy stock consistency.
(b) Magnetic Separator Plates in any widths for trough installations.
(c) Many standard sizes in stock. Special sizes on request.

Further information on Emerson Magnetic Separators gladly furnished.

The Emerson Manufacturing Co.

Division of John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U. S. A.



Sulphur

Thousands of tons mined daily, but where does it all go?

Did you ever have the misfortune on a steaming, sticky, sultry day to sit it out on a crowded parkway, bumper to bumper, waiting for traffic to clear? No doubt your thoughts were plenty sulphurous but probably not along the lines we have in mind.

We're thinking of the mineral Sulphur and its link with the automobile. Each car accounts for a substantial poundage of Sulphur, some estimates put it at around 25 pounds for the average car. Give or take 5 pounds, it shows that a tremendous tonnage of Sulphur is needed each year to put cars, buses and trucks on the road ready to operate. And don't forget the tire and battery replacements going on every day.

Sulphur enters the automobile picture through the tires, steel sheets, plated and plastic fittings, glass, battery acid and parts, copper tubing and wiring . . . all of which call for the use of Sulphur or its compounds in connection with their manufacture.

Can you wonder that Sulphur goes into industry just about as fast as the sulphur producers of the Gulf Coast Region can get it above ground and cooled preparatory to shipment?

Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

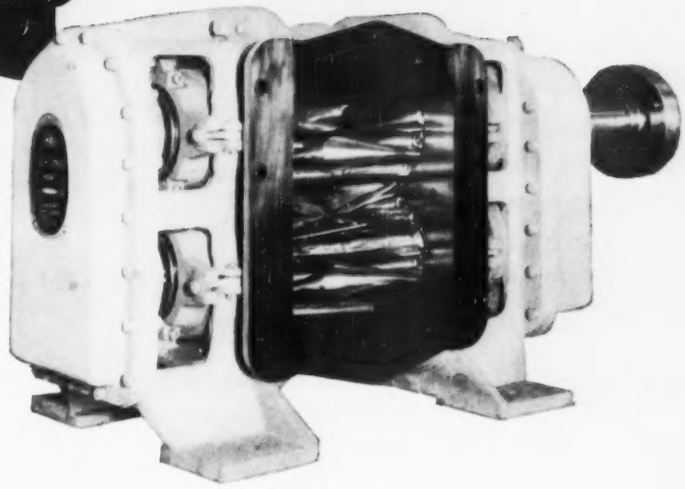
Sulphur Producing Units: Newgulf, Texas • Moss Bluff, Texas
Spindletop, Texas • Worland, Wyoming

THICK STOCK PUMP

PUMPING 10%-17% PULP

IMPCO

SERIES - 300 *
SERIES - 500 *



This unit is a positive displacement type pump specifically designed to handle pulps at high densities. The conical profile of its synchronous rotors permits the pumping of stock at densities above 10% A.D.—with lowest horsepower per ton—and no fibre damage. Truly the modern way to handle all types of pulp.

***Tons per day**

IMPROVED MACHINERY INC. J-35

NASHUA, NEW HAMPSHIRE

Sherbrooke Machineries Limited manufacture similar equipment in Canada.

Pulping of Hardwood Now Practical

ADVANTAGES OF AMMONIA BISULPHITE PULPING CONFIRMED

By Gordon A. Crowe

Technical Service Representative, Spencer Chemical Co., Kansas City, Mo.

BECAUSE OF THE LIMITED availability of softwoods in many parts of the country, a number of pulp mill operators are interested in the efficient pulping of hardwoods, such as beech, birch and maple. These operators will be encouraged by the results which have been obtained with ammonia base cooking.

23-Day Ammonia Test Run

ONE MILL especially interested in pulping hardwoods recently conducted a 23-day ammonia test run. Their carefully charted results show definitely that beech, birch and maple can be pulped easily in about seven hours' cooking time. Even more important, they discovered that the use of only a small percentage of these hardwoods quickly pays for the increased cost of ammonia base!

Gordon A. Crowe

OTHER CONCLUSIONS reached by the Technical Department of the mill making this test:

1) Ammonia base pulp gave increased yields when the regular mixture of softwoods was used.
2) Cooking time for softwoods was reduced by at least one hour.
3) Pulp quality was as good as and probably slightly better than the regular calcium base pulp.
4) Digester operation is more uniform when ammonia is used due to clean circulating systems.
5) Bleaching time and chemical requirements can be reduced when the pulp is made from ammonia base acid.

Information Available

IF YOU HAVE A QUESTION about Ammonia Bisulphite pulping, we'll be glad to hear from you. There is no charge or obligation for this service. Just write: Technical Service Section, Spencer Chemical Company, Dwight Bldg., Kansas City 5, Missouri.

AMERICA'S GROWING NAME IN CHEMICALS

How to make packings last longer

Tips by Johns-Manville Engineers to help you keep production rolling

The old packing gives the clue to most packing failures...

I was ruined by shaft misalignment. When old packing shows excessive reduction in cross-section directly beneath rod, shaft or plunger, bad alignment is indicated. Leakage usually occurs around top of shaft or rod. Cause may be worn bearings which permit shaft to whip.

Too much gland pressure did me in. Badly deformed rings next to the gland follower, with bottom rings in fair condition, suggest excessive gland pressure or improper installation. Excessive gland pressure sometimes causes packing to extrude between follower and rod or shaft.

Lack of lubrication made things too hot for me. If the wearing faces of the rings are dried out or charred, with the rest of the packing in usable condition, the trouble probably is lack of lubrication. Excessively high operating temperatures and wrong type of packing can cause similar symptoms.

I'm worn out because I turned with the shaft. Unusual wear on the outside circumference of the packing almost always indicates one of two conditions. The rings may be binding on the shaft and rotating with it, or the packing is too loose in the stuffing box and moving with the rod.

For all around paper mill use Johns-Manville Interlocked Rod Packing—Style No. 253

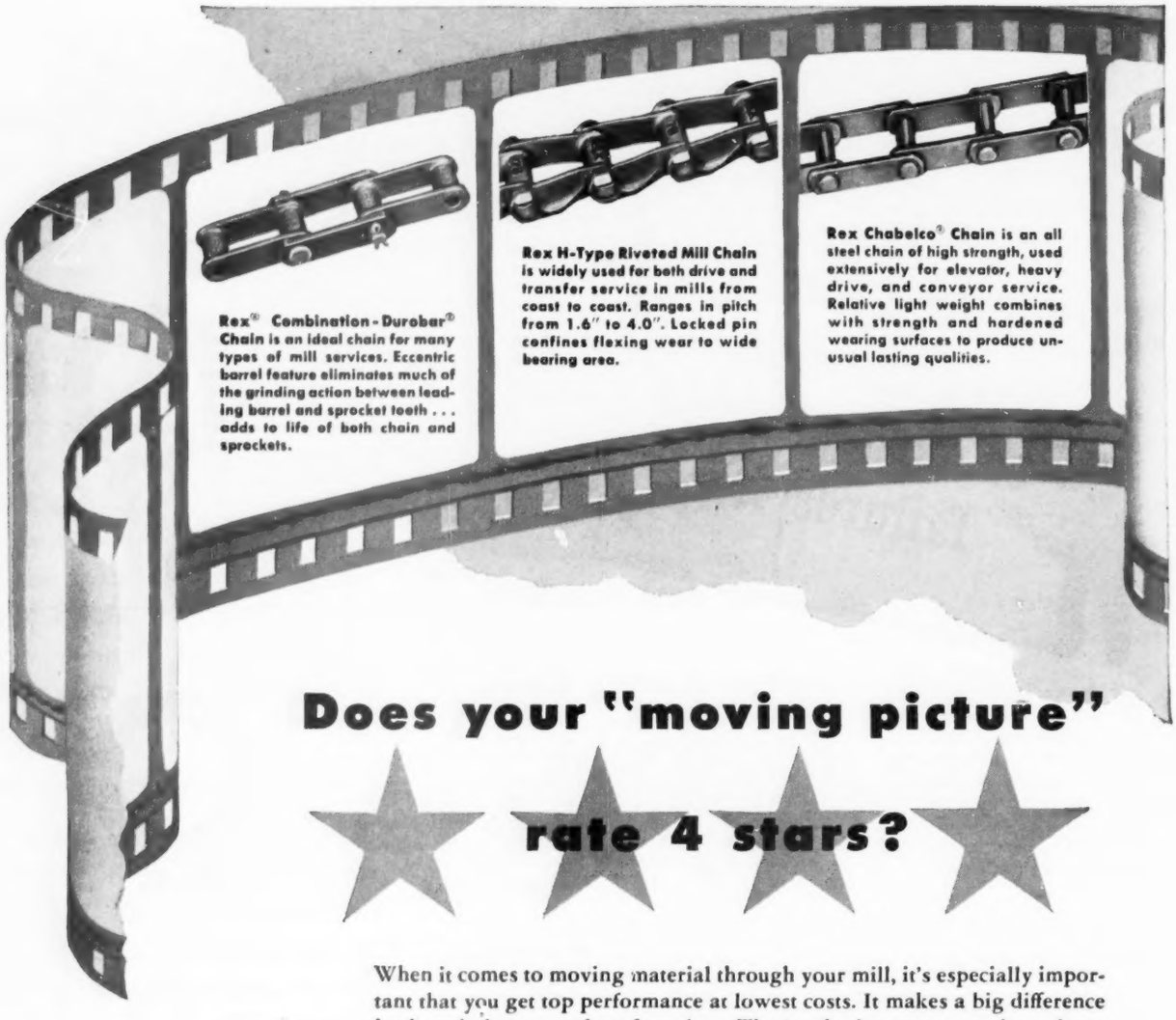
This is the universal paper mill packing—a process pump packing that is excellent for all around use in the paper mill. It has proved its superiority for packing Jordans and similar processing equipment. It is specially designed for service with water, washed and unwashed pulps, white water, and stock.

Because Interlocked is braided square, it lasts longer, has a better contact area and makes a tight seal with minimum gland pressure. Interlocked Style No. 253 is impregnated with a special lubricant that will not stain stock and is furnished ungraphited.

Your distributor will help, too! Your J-M Packing Distributor can help you take the guesswork out of packing problems. He carries complete stocks of Johns-Manville quality packings and can supply you promptly. For the address of the J-M Packing Distributor nearest you, write Johns-Manville, Box 60, New York 16, N. Y.

JOHNS MANVILLE JM PRODUCTS

Johns-Manville PACKINGS & GASKETS


Rex® Combination-Durobar® Chain is an ideal chain for many types of mill services. Eccentric barrel feature eliminates much of the grinding action between leading barrel and sprocket tooth . . . adds to life of both chain and sprockets.
Rex H-Type Riveted Mill Chain is widely used for both drive and transfer service in mills from coast to coast. Ranges in pitch from 1.6" to 4.0". Locked pin confines flexing wear to wide bearing area.
Rex Chabelco® Chain is an all steel chain of high strength, used extensively for elevator, heavy drive, and conveyor service. Relative light weight combines with strength and hardened wearing surfaces to produce unusual lasting qualities.

Does your "moving picture" rate 4 stars?

When it comes to moving material through your mill, it's especially important that you get top performance at lowest costs. It makes a big difference in that vital matter of profit or loss. That's why it pays you to investigate the Chain Belt line of materials handling equipment.

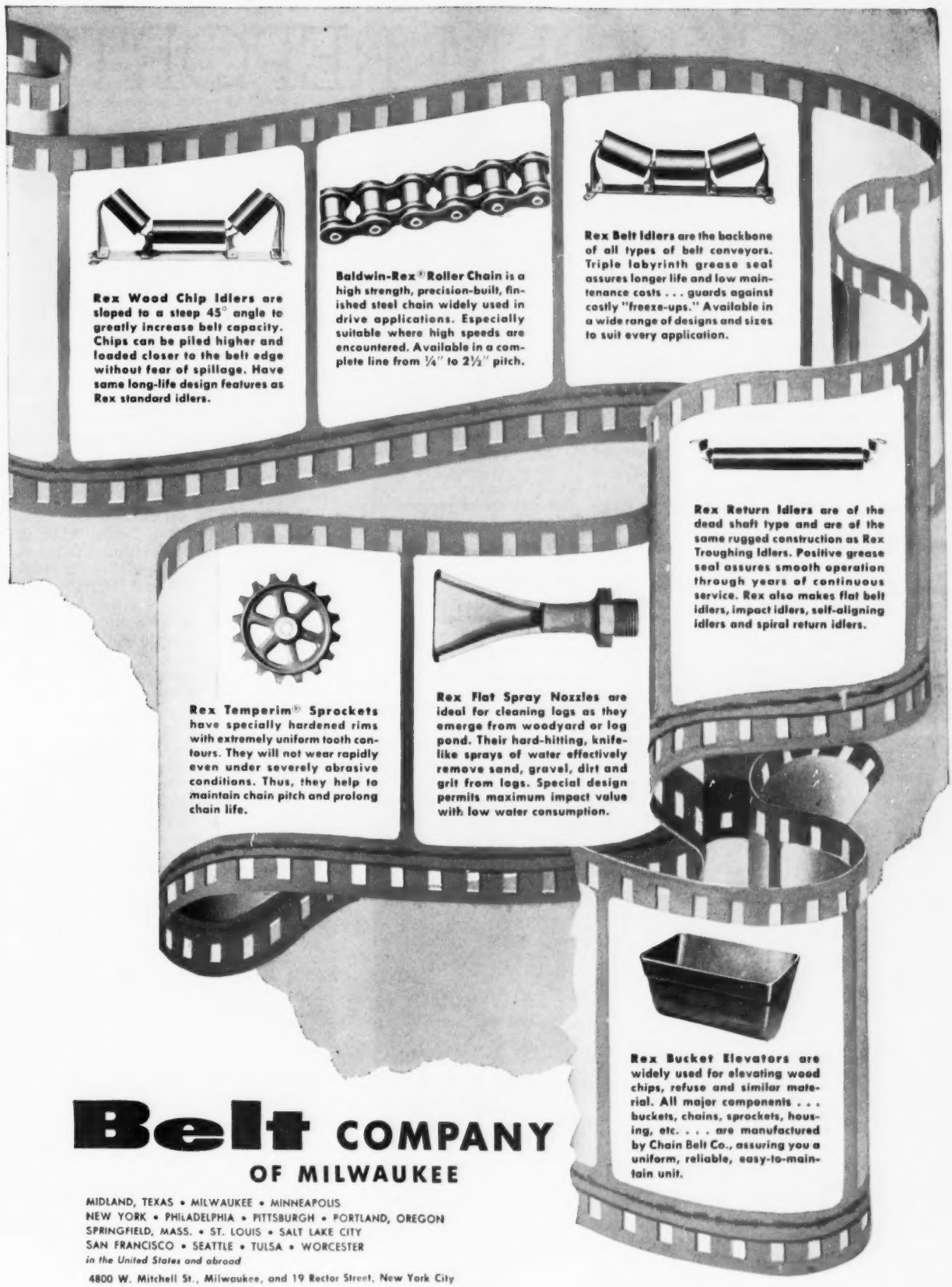
Whether your "moving picture" calls for chains and sprockets, belt conveyors, or complete bucket elevators, you'll find in the complete Chain Belt line the exact equipment that best fits your requirements for low-cost materials handling.

Rex Engineers are well qualified by years of experience to help you with your design, selection and replacement problems. They are backed by equipment which has been recognized as "tops" in quality for over 60 years. Call your nearest branch office today or write for more information on Rex Equipment for the Forest Products Industries. Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT REX COMPANY ®

Chain

ATLANTA • BALTIMORE • BIRMINGHAM • BOSTON
BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS
DENVER • DETROIT • EL PASO • HOUSTON
INDIANAPOLIS • JACKSONVILLE • KANSAS CITY
LOS ANGELES • LOUISVILLE
Distributors in principal cities
Export Offices:


Rex Wood Chip Idlers are sloped to a steep 45° angle to greatly increase belt capacity. Chips can be piled higher and loaded closer to the belt edge without fear of spillage. Have same long-life design features as Rex standard idlers.
Baldwin-Rex® Roller Chain is a high strength, precision-built, finished steel chain widely used in drive applications. Especially suitable where high speeds are encountered. Available in a complete line from ¼" to 2½" pitch.
Rex Belt Idlers are the backbone of all types of belt conveyors. Triple labyrinth grease seal assures longer life and low maintenance costs . . . guards against costly "freeze-ups." Available in a wide range of designs and sizes to suit every application.
Rex Return Idlers are of the dead shaft type and are of the same rugged construction as Rex Troughing Idlers. Positive grease seal assures smooth operation through years of continuous service. Rex also makes flat belt idlers, impact idlers, self-aligning idlers and spiral return idlers.
Rex Temperim® Sprockets have specially hardened rims with extremely uniform tooth contours. They will not wear rapidly even under severely abrasive conditions. Thus, they help to maintain chain pitch and prolong chain life.
Rex Flat Spray Nozzles are ideal for cleaning logs as they emerge from woodyard or log pond. Their hard-hitting, knife-like sprays of water effectively remove sand, gravel, dirt and grit from logs. Special design permits maximum impact value with low water consumption.
Rex Bucket Elevators are widely used for elevating wood chips, refuse and similar material. All major components . . . buckets, chains, sprockets, housing, etc. . . . are manufactured by Chain Belt Co., assuring you a uniform, reliable, easy-to-maintain unit.

Belt COMPANY
OF MILWAUKEE

MIDLAND, TEXAS • MILWAUKEE • MINNEAPOLIS
NEW YORK • PHILADELPHIA • PITTSBURGH • PORTLAND, OREGON
SPRINGFIELD, MASS. • ST. LOUIS • SALT LAKE CITY
SAN FRANCISCO • SEATTLE • TULSA • WORCESTER
in the United States and abroad

4800 W. Mitchell St., Milwaukee, and 19 Rector Street, New York City

DEVELOPMENTS AT 13TH WORLD CONGRESS

STOCKHOLM REPORT

ONE OF THE MOST distinguished gatherings ever to take place of pulp and paper scientists and wood technologists from all over the world was held in August in Sweden.

A first hand, authoritative report of the 13th International Congress of Pure and Applied Chemistry, and particularly of the portions of it that were concerned with wood, pulp and paper technology, was brought home to readers of PULP & PAPER in this interview with Dr. Alfred H. Nadelman of Western Michigan College, Kalamazoo, Mich., one of several well-known American industry scientists who were present.

The events in Stockholm and at nearby Uppsala were the high points of an eight-nation European tour for Dr. Nadelman, professor and head of the curriculum of paper technology at Western Michigan and they must have been a great experience for close to 2,000 other scientists from all over the world. One of the largest delegations came from the United States.

New Knowledge of Wood Constituents

Perhaps the most important progress reported at this meeting for the pulp and paper industry in the field of wood chemistry, in the viewpoint of Dr. Nadelman, was the increased knowledge of non-cellulosic constituents of wood. The Congress delegates heard that knowledge of lignin is increased consistently by the use of two relatively new methods of research, namely, (1) biosynthesis of lignin and (2) research on lignin by use of model substances. This means the building up of lignin from relatively simple phenolic substances by biochemical methods and comparing lignin and its behavior with relatively simple chemical model compounds (well defined and known compounds).

DR. BORJE STEENBORG (left), leading technologist with Swedish Forest Products Laboratory in Royal Institute, Stockholm, who was one of luminaries at Congress, and DR. K. FREUDENBERG (right), of Heidelberg University, world renowned lignin authority, who talked on his favorite subject.

As to hemicellulose, the "splendid" presentation by Prof. Roy Lester Whistler, Purdue University, on "advances in hemicellulose chemistry" summarized the progress made in this field, said Dr. Nadelman. This paper dealt with the occurrence of hemicelluloses as complex mixtures, their extraction from plant tissues and from plant pulps, their separation into molecular types and the chemical and structural characterization of the purified components (paper is available from the author at Purdue University).

Although the wood chemists were divided into three groups depending on their specific interests, namely, cellulose, lignin and extractives, three plenar lectures were offered jointly to all scientists in the field of wood chemistry.

Prof. K. Freudenberg, from Heidelberg University, presented a plenar lecture on the structure of lignin.

Prof. Leopold Ruzicka, from Zurich, Switz., presented a plenar lecture on "from abietic acid to lanosterol."

And, finally, Dr. Harry F. Lewis, dean of the Institute of Paper Chemistry, Appleton, Wis., spoke with his customary charm on the current problems affecting the wider use of wood as a technical raw material.

His message was that the whole tree should be used in manufacturing, from bark to lignin, etc., and waste of wood material should be reduced to a minimum.

The points that Dr. Nadelman made about the two new methods of research were emphasized and brought out especially in the lecture by Dr. Freudenberg, who two years ago toured United States paper industry centers to give seminars and talks for younger mill employes.

Many Nations Contribute

Dr. Nadelman declared that one of the most stimulating and interesting sidelights on the conference was that virtually every

PULP & PAPER'S PICTURES FROM FAMOUS CONFERENCE IN SWEDEN

AT STOCKHOLM AND UPPSALA INTERNATIONAL CONGRESS, which brought leading scientists in pulp and paper and wood technology to Sweden from all over the world.

TOP LEFT: MRS. BORJE STEENBORG, wife of the head of Pulp and Paper Technology at the Royal Institute of Technology in Stockholm, and DR. CONSTANT G. G. NINCK-BLOK, Research Director of Holland's biggest mills, owned by Van Gelder Zonen N. V. (its five mills make over 50 percent of all paper made in Holland). TOP RIGHT: DR. HERMAN MARK, from Brooklyn Polytechnic Institute, Brooklyn, U.S.A., who was Honorary Chairman of Macromolecules Section at the conference. He is shown here discussing polymerization processes in Stockholm, and later he also talked at Uppsala. Lower right: PROF. ROGER ADAMS, of the University of Illinois, U.S.A., long a leading figure in the American Chemical Society, and EMIL OTT, Director of Research for Hercules Powder Co., Wilmington, Del., U.S.A.

participating nation had important and varied contributions to make.

For example, Prof. Thomas Dillon, from University College, Galway, Ireland, one of the best known experts in the field of seaweed chemistry, spoke colorfully on the related subject, constitution of gum arabic (remoistening gum and thickening substance).

And notable was a talk on chemistry of oxidative changes in cellulose by E. D. Kaverzneva, of the Institute of Organic Chemistry, Academy of Science, U.S.S.R., in Moscow. There were about a half dozen Russian delegates present.

The Austrian, Dr. Anton von Wacek, University of Graz, spoke on the methoxyl content of wood, which drew a lot of attention.

And there was the widely known Madame Prof. Gunhild Aulin-Erdtman, who collaborates with her husband in the field of lignin chemistry in Sweden, who discussed phenolic elements of lignin.

American Participation

The American delegation, Dr. Nadelman pointed out, was very strong in participation including Dr. F. E. Brauns, of the Institute of Paper Chemistry, who discussed unsolved problems in lignin chemistry, G. A. Richter, from Eastman Kodak, E. C. Jahn, from Syracuse University, who gave two papers, and D. F. Othmer, from Brooklyn Polytech. All of these men gave papers and the meeting was "pleasantly pro-American and the Americans were accorded many honors."

There were leading scientists from Germany, France, Norway, Finland, Australia, Holland, Austria, Canada, Israel, England, Italy, Russia, Japan, etc., and Sweden, of course, had by far the biggest delegation.

All discussions were carried over to the luncheon table in the generously appointed Students Union Building, at the Technical University in Stockholm, said Dr. Nadelman. Social events were "overwhelming." The highlight was a reception by the City of Stockholm to the participants in the City Hall, where every room of the unusually beautiful building was thrown open and where an address by the mayor was a feature. The crowd stayed on for dinner and dancing in a stage setting which "challenged Hollywood," he said.

Among the Americans participating, Prof. Herman Mark of Brooklyn Polytech headed a symposium on macromolecules, Eastman Kodak's Dr. Richter discussed delignification by sulfuric acid, Dr. Jahn brought to the meeting word of semi-chemical neutral sulfite pulping of aspen in the U. S., and he also talked on acetylation of hemicellulose.

Walter H. Swanson, whose promotion from assistant v. p. to vice president of research and development of Kimberly-Clark, was announced on the very day that he returned to Neenah, Wis., from Europe, and Dr. Walter F. Holzer, assistant to the manufacturing v. p. of Crown Zellerbach, who brought his entire family across, were on hand.

Prof. Erik Hagglund and Prof. Holger Erdtman of Sweden headed the symposium on wood and constituents. Prof. The Svedberg of Uppsala University, well known in this industry, too, headed a physical chemistry section, and he was honorary president of the entire conference. Chairman of both the organizing and the executive committees was Dr. Arne Olander of Stockholm University.

Dr. Nadelman said the visits to Swedish pulp and paper mills made by delegates emphasized "the very important trend going on in Sweden of up-grading and improving quality of their pulps and papers."

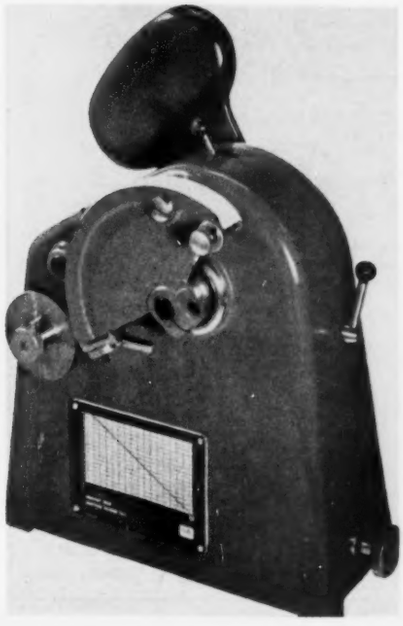
Russians Distribute Papers

The Russian delegates to Stockholm brought a fat "Book of Communications" to the Stockholm meeting which consisted of 350 printed pages of technical papers by seven Russian authors, and these books were passed out to delegates. Apparently Russia was the only country to do this. Authors were M. M. Doubinine, Y. I. Guerassimov, G. S. Jdanov, Z. V. Zvonkova, K. T. Prochine, V. V. Korchak, and E. D. Kavarzneieva. The papers were highly technical and described as of varying importance by delegates. The booklet contained two versions of each paper—one in French and one in Russian, which of course, made it a thick volume. The Russians came to the meeting with considerable luggage and equipment. Their subjects included structure of proteins, crystal chemistry, absorption of gases and vapors, thermodynamic properties of bivalent metals, and there was one in the pulp and paper field, It follows:

AT STOCKHOLM MEETINGS—DELEGATES FROM U.S.A. AND BRITAIN

DELEGATES at the International meetings (l to r): DEAN HARRY F. LEWIS of the Institute of Paper Chemistry, who in his own colorful style, told about wood utilization and reduction of waste; DR. WALTER F. HOLZER, Research Assistant to the Manufacturing Vice Pres., Crown Zellerbach Corp., San Francisco, who took his family to Sweden; JOHN G. STRANGE, Vice Pres. and Treasurer of Institute of Paper Chemistry, Appleton, Wis.; DR. ALFRED H. NADELMAN, Prof. and Head of Pulp & Paper Technology Curriculum, Western Michigan College, Kalamazoo, Mich.; GORDON C. INSKEEP, European representative of American Chemical Society publications, London, England, and MRS. HILDA NADELMAN of Kalamazoo, wife of Dr. Nadelman.

THIS NEW INSTRUMENT for evaluation of pick resistance and coatability of printed papers, was found used widely in Europe, including England and Holland, where Dr. Nadelman saw it. He heard there were just two in America—one at the Canadian Industry Research Institute in Montreal and one at Lehigh University. Both paper and ink can be tested on pick. It also determines density of print, striking in of ink during first minute, drying time, smoothness of paper. In Britain sole agent is Star Paper Sales, 1 Tudor St., London E.C. 4.



CHEMISTRY OF OXIDATIVE CHANGES IN CELLULOSE

By. E. D. Kaverzneva

Institute of Organic Chemistry, Academy of Science of the USSR, Moscow, USSR.

A systematic study of the chemical changes in cellulose on oxidation with sodium hypochlorite, and with hydrogen peroxide, has led to a general scheme for oxidative processes under the influence of these oxidants. The rates of the several competing oxidative reactions are influenced in various ways by changing the pH of the medium. Thus oxicelluloses with varying chemical groups and properties can be formed.

The presence of keto groups in the oxicellulose has been proved by the preparation of oximes and their reduction to amino derivatives. Some of these groups are α-oxymonoketonic, which follows from the fact that a positive endiolic reaction is obtained with phosphoric-arsenic-wolframic acid and oxicelluloses, prepared in an alkaline solution. In oxicelluloses obtained by hypochlorite oxidation in acid medium we have observed the formation of very small amounts of carbonic acid esters, which are easily hydrolysed with the evolution of CO_2 even by a brief treatment with 0.025 N NaOH in the cold. Some of the carboxy groups in the oxicelluloses form lactonic bonds, as was discovered from the formation of hydroxam acids. On oxidation with H_2O_2 two aldehydic groups are formed by the splitting of the C_2-C_3 bond. A similar reaction could not, however, be detected on oxidation with HClO.

The importance of very small traces of oxygen for the oxidative splitting of cellulose in alkaline medium was shown by measuring the decrease in the viscosity of cellulose solutions

AMONG THOSE PRESENT at Stockholm conference (l to r): Prof. Holger Erdtman, of Royal Inst. of Tech., Div. Organic Chemistry, Stockholm; H. F. Lewis, Dean, Institute of Paper Chemistry, U.S.A.; and Prof. Erich Hagglund, of Swedish Forest Products Research Lab., Stockholm.

in copper-ammonia reagent during the stepwise addition of increasing amounts of oxygen. The addition of easily oxidized substances (oxidation inhibitors) retarded the splitting reaction and almost completely stopped the decrease of viscosity.

The fundamental cause for the decrease of viscosity on oxidizing cellulose in alkaline medium is the presence not only of aldehydic but also of ketonic groups, which lead to the weakening of the alkali resistance of the glucosidic bonds. This statement is corroborated by a large number of experimental facts.

The formation of new functional groups on the oxidation of cellulose leads to a change in the properties of the ethers that can be obtained from it. Carboxylic and aldehydic groups form ester and acetal cross-links between the macromolecules during the etherification and in this way lower the solubility of the ether.

Other Highlights of Trip To Europe by Nadelmans

Dr. A. H. Nadelman of Michigan State College, and his wife, had an interesting trip in other sections of Europe besides Sweden, including Austria, where he gave a paper in German at the opening of the new Institute of Pulp and Paper Technology in Graz. Also they toured north European countries, seeing a modern strawpulp mill in Holland, exceptionally skillful operations in converting in England for napkins and sanitary tissues, and visiting and touring several mills in northern England. A graphic arts display in Holland was a highlight.

Turcotte of Puget Pulp Comments on Trends

Lawson Turcotte, president of Puget Sound Pulp & Timber Co. and president of Ketchikan Pulp Co., Says: "Expanded production by domestic mills, coupled with a marked increase in imports during the first half of 1953, indicates new records for the year in both production and consumption of woodpulp."

His quarterly survey of woodpulp operations discloses that at the halfway point in 1953 domestic production was 5 percent above last year, imports were 18 percent higher, and domestic consumption was up 7 percent.

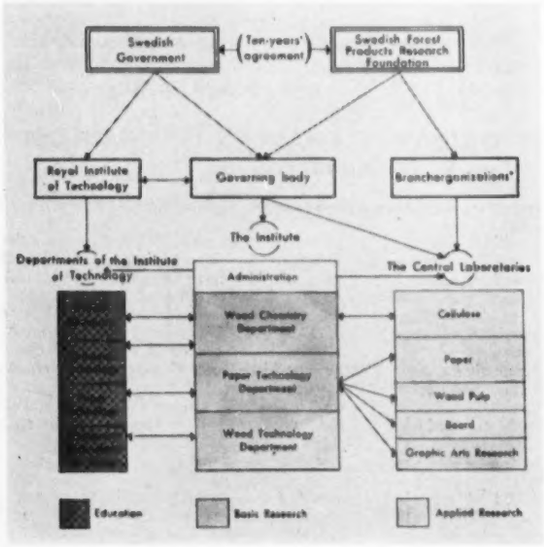
American mills produced 8,814,000 tons of all classes of woodpulp in the first six months of 1953, in comparison with 8,374,000 tons in the first half of 1952. Imports were 1,091,000 tons, as against 921,000 tons last year.

"The supply-demand relationship in the woodpulp industry is currently the most satisfactory that it has been for a long time," Mr. Turcotte declared. "Total consumption for the year will be very close to 20,000,000 tons," he predicted.

SOME OF THESE MILLS were toured by many of the delegates to the 13th International Congress of Pure and Applied Chemistry in Sweden. They received a booklet on Swedish chemical industries which contained this map.

Printed Stockholm, May 1950

THIS IS DIAGRAM OF ORGANIZATION OF SWEDISH FOREST PRODUCTS RESEARCH LABORATORY, where some of the sessions of the Stockholm Conference were held. Director of the Paper Technology Dept. is Dr. Borje Steenborg, who is well known in scientific industry circles in this country.
Branch organizations include: Swedish Cellulose Association; Swedish Paper Mills Association; Swedish Wood Pulp Association; Swedish Wallboard Manufacturers' Association; Swedish Wood Exporters' Association; Branch Organization of Timber Industry; Swedish Plywood Manufacturers' Association; Graphic Arts Research Foundation.



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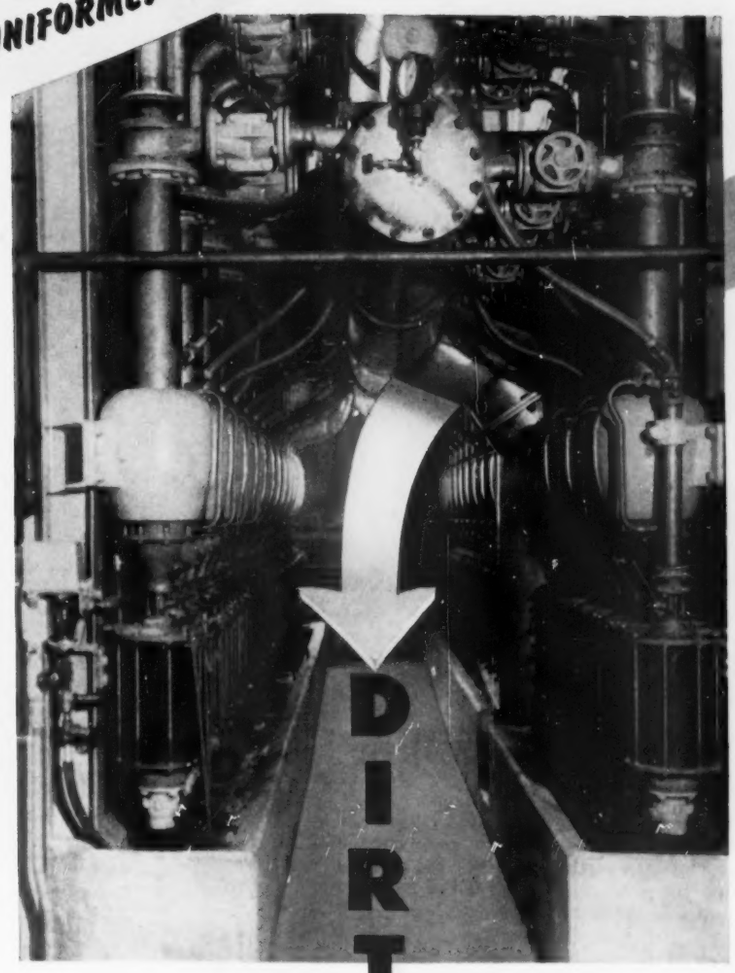

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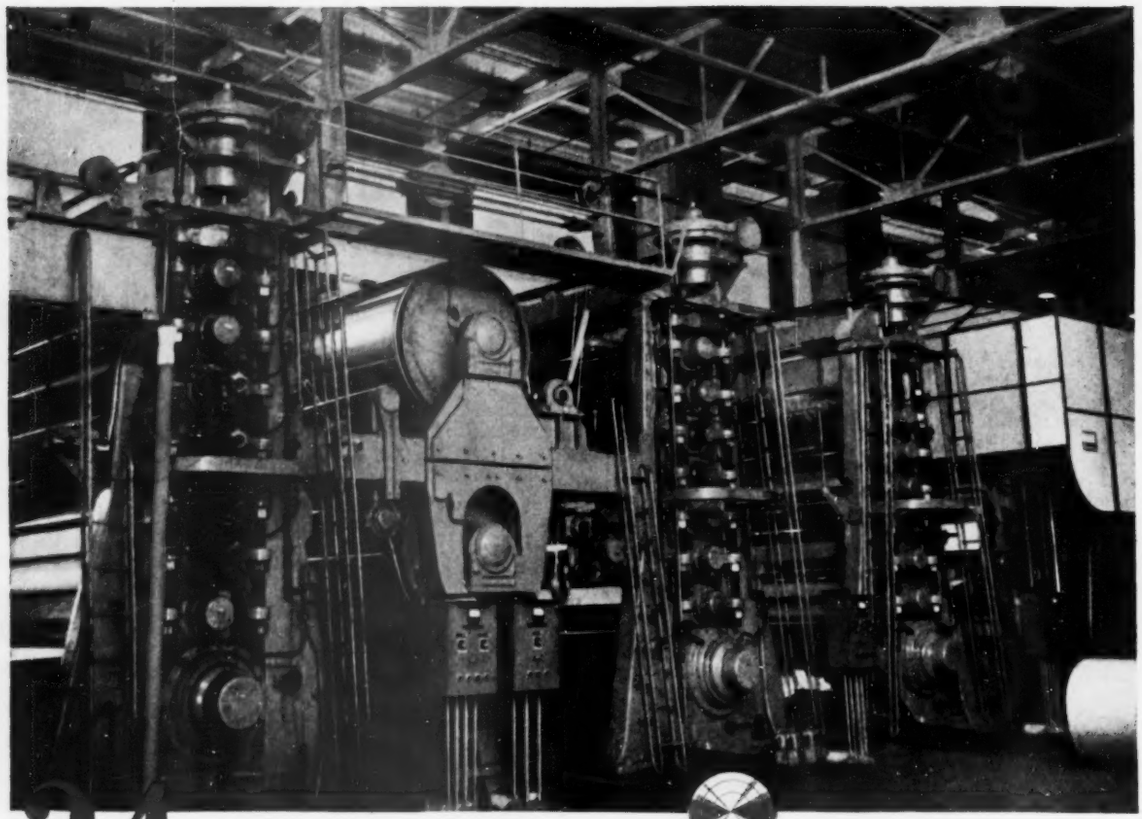

24 of the reasons why HOLLINGSWORTH & WHITNEY has a fine reputation

One way in which Hollingsworth & Whitney has maintained a reputation for producing high-quality papers for over ninety years is by buying the "best" in new equipment.

For example, each of the three calenders in the above photo is equipped with eight Farrel rolls. Although these twenty-four rolls are a small part of the paper machine, they make an important contribution toward producing a uniform, compact roll of paper at the reel.

Farrel rolls are designed to suit individual requirements. They are made of the correct metal formula for the service; with the correct depth and hardness of chill to provide necessary strength and long life; and with the correct amount of crown to compensate for deflection.

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The 174-inch Fourdrinier machine and the three calender stacks recently installed in the new addition to Hollingsworth & Whitney's Mobile (Alabama) mill, were designed and built by Rice Barton Corporation, Worcester, Mass. Calender rolls were furnished by Farrel.

•

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AUSTRIA'S NEW INSTITUTE — ITS AIMS

By Prof. Dr. Ing. Ferdinand Wultsch

Institute of Pulp & Paper Technology, Technical University at Graz, Austria

THE OPENING of the laboratories of the new Institute of Pulp and Paper Technology at the Technical University at Graz represents the realization of an ideal already put into effect in other countries which are concerned with the production of pulp and paper on an appreciable scale.

The constantly increasing demand for better quality of paper, the constantly increasing variety of uses for paper make it necessary that the modern papermaker adjusts his production methods to certain specifications. Under these circumstances, the creation of a central research and testing laboratory was necessary in the interests of service to this important industry which is largely engaged in export of its product.

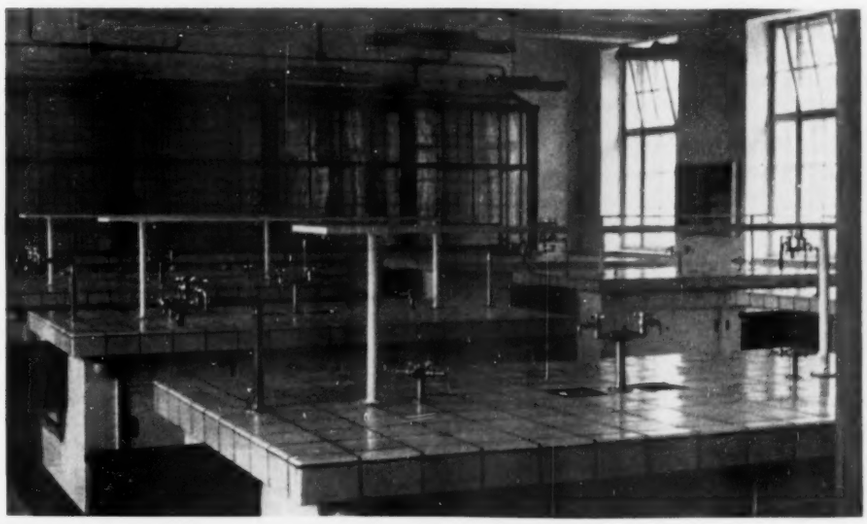
The security of a multitude of instruments required for evaluation of pulp and paper by modern methods is in itself an undertaking of considerable difficulty. This problem could be solved only for an Institute which was designed, first, to give the scientists tools for their activities in the field of research; secondly, which made possible to industry the practical evaluation of their products in every respect; and which, finally, had the task to familiarize the students, the future papermakers, with all methods of testing and with all specifications and standards during their time of study.

In order to characterize the above-stated three purposes of the new Institute, a few examples may be given which describe the kind and the scope of the investigations to be carried out in the classrooms and with the facilities of the paper testing laboratories.

PROF. DIPL. ING. KARL ADAMIK (left), head of the new Institute of Pulp and Paper Technology of the Technical University at Graz, Austria, built on war-bombed area of the University with American aid funds. Working long hours to prepare for the dedication in July, he was seriously injured in a truck collision while driving his motorcycle in Graz, just a week before the event. He suffered a broken collarbone and compound fractures and was unable to attend. A letter from him to *PULP & PAPER* indicates he is well recovered now.

PROF. DR. ING. FERDINAND WULTSCH (right), of the Institute staff, describes its aims in the accompanying article for *PULP & PAPER*. About 250 pulp and paper scientists from many countries were present at the dedication.

A VIEW IN MAIN LABORATORY of new Institute of Pulp and Paper Technology, Graz, Austria. It is furnished throughout with equipment manufactured in the United States. U.S.A. funds built it. A student from Graz was sent for one year to Western Michigan College, in Kalamazoo, Mich., to learn how to use the instruments and equipment of a pulp and paper laboratory.



DR. ADAMIK, INJURED, MISSES DEDICATION

A SERIOUS ACCIDENT to Prof. Karl Adamik, chosen to be the head of the newly built Institute of Pulp & Paper Technology at the Technical University in Graz, Austria, prevented him from attending its dedication in July.

Just a week before some 250 scientists from all over the world were to gather there for the event, he was driving his motorcycle on a Graz street and crashed into a truck, suffering a broken collarbone and compound fractures. Of course, he was unable to attend the ceremonies on which he had worked hard in preparation.

A letter dated Aug. 5 from Dr. Adamik to PULP & PAPER indicates he is well recovered. He said "the dedication of the Institute and the scientific meeting was a very good success." He called it a "Papier -und Cellulosetechnische Tagung in Graz."

In a war-bombed and wrecked area of the University, this new Institute has risen. It was built with ECA-MSA funds from the United States. All equipment was made in U.S.A. A student was sent to Western Michigan College to learn how to use such equipment.

Dr. A. H. Nadelman, head of pulp and paper technology at Western Michigan College, and Dr. F. Brauns from the Institute of Paper Chemistry, Appleton, Wis., represented the U. S. at the dedication and each gave papers in German. Dr. Nadelman's was on interrelation of fiber lengths, distributions and strengths development of pulp as a result of beating. Dr. Brauns' was on lignin and related production.

The new Institute in Austria is serving a greatly expanded Austrian paper industry, rehabilitated with U.S. funds, and featured by three new mills, the enlarging of many others, and the development of an export trade. See PULP & PAPER'S WORLD REVIEW NUMBER of 1953 for a description of Austrian expansion.

A Great Multitude of Tasks

The chemical laboratories designed for investigations in the field of organic as well as inorganic chemistry will train students in the field of qualitative and quantitative analysis for chemical process control.

The raw materials used in the pulp and paper industry are chemically examined and the suitability of the raw material for use in the production processes are investigated.

In order to evaluate the pulping of fibrous raw material by different chemical pulping methods, for the determination of optimum yield, highest strengths and maximum cleanliness, special digesters have been installed.

The so-called optical laboratory contains microscopes for identification of fibers and fiber mixtures. Optical methods are used to determine the degree of pulping as well as to evaluate the mineral fillers in the paper.

The mechanical evaluation of the individual steps of stock preparation is carried out by instruments accommodated in

PULP & PAPER'S PHOTOS of scenes at dedication of Austria's new Institute of Pulp & Paper Technology at Graz, Austria.

TOP ROW, left to right: DR. F. PANCIROLLI, Vice Director, Experimental Station for Pulp and Paper and Textile Fibers, Milan, Italy; **DR. ANTON VON WACEK**, Organic Chem., Technical U., Graz; **DR. W. KARSCH**, Tornesch Yeast Co., Tornesch, Germany; **DR. T. RIEHM**, Chemical Wood Utilization Co., Mannheim, Germany; **DR. A. H. NADELMAN**, head of paper technology, Western Michigan College, U.S.A.; **DR. OTTO HAERTEL**, Plant Physiology, Univ. of Graz, and **DR. F. WULTSCH**, Inst. of Pulp & Paper Tech., Technical U., Graz—then in next group: **DOZ. DR. E. TREIBER**, Physical Chemistry, Univ. of Graz; **DR. H. CORTE**, Research Dept., Zellstoff Fabrik Waldhof, Germany; **DR. PANCIROLLI** again (partially out of view) and **PROF. DR. HAERTEL** again.

SPEAKER ALONE at right, at the dedication, is **RECTOR MAGNIFICUS PROF. ARCHITECT DIPL.-ING. R. LORENZ**, of the Institute laboratories.

Below—a group at dedication. In front row (l to r): DR. M. REBEK, Organic Chemistry, Technical U., Graz; **DR. WULTSCH; SENATOR DR. H. MUELLER-CLEMM** of Graz; **DR. EDGAR MOERATH**, United Nations FAO, from Rome, Italy, and **DR. NADELMAN.**

the remaining special laboratories. Evaluations of the degree of freeness, and of the strength characteristics of paper are carried out. Among these characteristics are tearing resistance, breaking length, elongation, bursting strength and others, which permit characterization of material to be used in the manufacture of paper multiwall bags.

Conclusions can be drawn as to the behavior of paper when bent, folded, and crushed, the impact resistance, the resistance against abrasion, ability to take scoring, etc.

The significance of these evaluations for a multitude of grades of paper becomes evident when one considers the conconstantly increasing number of applications of paper in the packaging field.

For the determination of the suitability of writing and printing papers, testing methods are used which determine the degree of sizing as well as the suitability for writing.

Values are determined which are of particular interest to the printer; spectral reflectivity and smoothness of paper, receptivity for printing ink, presence or absence of show-through, resistance against picking and dusting, measurement of color values, brightness, use of optical bleaching agents, resistance to yellowing of paper, are a few of the facts which are to be determined.

Paper used for food packaging and for sanitary purposes are to be evaluated as to wet strength as well as to absorptivity, air permeability and greaseproofness.

Ability to Meet Competition

A description of the instruments and of their performance has to be omitted. They are well known to the papermaker and to the technical man. It suffices to stress that the multitude of above mentioned characteristics of the finished paper products determined by the new testing laboratory will provide the paper industry with useful information which will be criteria for the suitability of different grades of paper for definite use applications.

The development of methods for physical and chemical production control permit us to hope that the new Institute will be accredited as an official state testing laboratory. If so, the laboratory may increase its usefulness by acting as referee in case of differences in opinion as to the quality of paper.

Due to the untiring efforts of Professors Adamik and Rebek and due to the help of the American and Austrian European Recovery Plan organization, the new laboratories contribute materially to insure the position of the Austrian paper industry products on the world market.

Newsprint Market

Canada's $630 million newsprint industry has been cheered by an unexpected increase in demand. Earlier in the year operators felt that they would have to content themselves with production about 5 percent below rated capacity, but now it's beginning to look as though demand will exceed rated capacity.

For the first seven months of this year consumption of newsprint in the U.S. was 3 percent higher than in 1952, and there is no longer any anxiety over a surplus that cannot readily be sold.

Montreal head offices report that Scandinavian deliveries have been delayed, sometimes as much as six months, and that no more orders for delivery to South American this year are being accepted.

Jim Kahn of Infilco Dies Suddenly in Tucson

James Murray Kahn, widely known manager of Pulp and Paper Division, Infilco Inc., Tucson, Ariz., died of a heart attack June 30. He was 50.

Mr. Kahn had been with Infilco, Inc. for 31 years. He was a member of TAPPI and of the Superintendents Association. His assistant manager in recent years has been Ed Crowley, formerly of The Northwest Paper Co.

THE MIDDLE ATLANTIC AREA—another in a series of scenes . . . regions where Appleton Wires serve the paper industry.

BACKTRACK from the Ohio river valley through the Middle Atlantic Area...cross rugged, mountainous Pennsylvania to New York and the Atlantic Coast, and you have traversed an area of typical, diversified America.

Here, blended in with an economically healthy panorama of agriculture, romantic river traffic and busy industrial centers is the paper industry. Yes, here are hundreds of mills...and, you can bet that practically every one using Fourdrinier wires already knows that *Appleton Wires are Good Wires!*

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PARKER ON TARIFF STUDY COMMISSION

Under the administration program to give a full year of study to the Reciprocal Trade Agreements, before recommending any changes or repeal—a program concurred in by the American Paper & Pulp Association leadership—President Eisenhower has now appointed a commission to study American foreign economic policy.

Because pulp and paper creates a major portion of U.S. foreign exchange, this study, and whatever recommendations ensue, will have an important bearing on the future of this industry.

It is noteworthy that a leader of this industry, Cola G. Parker, chairman, and until recently president, of Kimberly-Clark Corp., and with an illustrious legal background, has been appointed a member of the commission.

Clarence Randall, board chairman of Inland Steel Corp., is chairman, and other members are John Hay Whitney of New York; Jesse W. Tapp, San Francisco banker; Lamar Flemming, Jr., president of Anderson, Clayton & Co., of Houston, Tex., David J. McDonald, president of the C.I.O., and John H. Williams, Harvard professor. Mr. Parker, Mr. Whitney and Mr. Williams were listed as Republicans, the others as Democrats.

EXPANSION AT SOUTHERN KRAFT MILL IN PANAMA CITY

EXPANSION OF INTERNATIONAL PAPER CO.'s Panama City, Fla., mill required enlargement of sewer lines and settling basin for effluent. Here is a Lorain crane (Model L50-K) laying large concrete pipe at edge of pond, which is east of the mill proper. The mill and plant of Arizona Chemical Corp., affiliated with International Paper Co., show in background.

A NEW SODA BASE SULFITE PROCESS

A pilot plant operation of a new soda-base sulfite pulp process is being tested at Nekoosa-Edwards Paper Co., and several of the largest sulfite pulp producing companies on the Pacific Coast and in Wisconsin are watching developments closely with strong possibilities now that one or another may put in a mill scale plant.

The process at the Port Edwards, Wis., sulfite mill uses ordinary lye in place of limestone. Western Precipitation Corp., of Los Angeles, owns a recovery process for the soda, which must succeed to make it economical. The process is fundamentally similar to the conventional kraft process after the cook. Nekoosa-Edwards has made about 500 tons by this process and reports that it appears technically feasible but must undergo critical mill scale evaluation. Limited success has been attained in processing the liquor for burning and recovery of heat and chemicals.

Nekoosa-Edwards executives said results are encouraging.

W. A. Schmidt, president of Western Precipitation, Los Angeles, is taking a direct interest in the pioneering project and supervises it for his company, with Robert O. Boyer working under him with Nekoosa-Edwards staff at Port Edwards. It has been also called the Bradley Process, for Lynn Bradley, who is on the West Coast.

Mr. Schmidt was a student at the University of California under the famed Dr. Cottrell, inventor of the electrostatic precipitator.

FOREST GROWTH never stops. North America forests are the most productive in the world. They can be made even more productive.

EAST TEXAS CO. OFFICIALS

FOSTER PARKER (left), is Secretary-Treasurer and a Director of the new East Texas Pulp & Paper Co., building a new chlorine dioxide bleaching kraft mill of 300 tons capacity at cost of $25,000,000 in Evadale, Texas. CLYDE E. COLE (right), is Assistant Secretary-Treasurer and Controller of the new company. Mr. Parker is also with Houston Oil Co. of Texas, a principal owner of the new company. Mr. Cole was formerly Controller and Asst. Business Mgr. of the University of Houston.

EAST TEXAS APPOINTMENTS

Here are pictures of more officials of the East Texas Pulp & Paper Co., which expects to start up its new 300-ton chlorine dioxide bleached kraft mill at Evadale, Tex., late in 1954. A complete account and description of this mill's equipment and the company organization, with photos of Pres. Harold Decker and other directors and officers, was published in the Sept. issue of PULP & PAPER (p. 49).

Another appointment is announced by R. M. (Mike) Buckley, executive vice president and general manager, who has moved to Evadale.

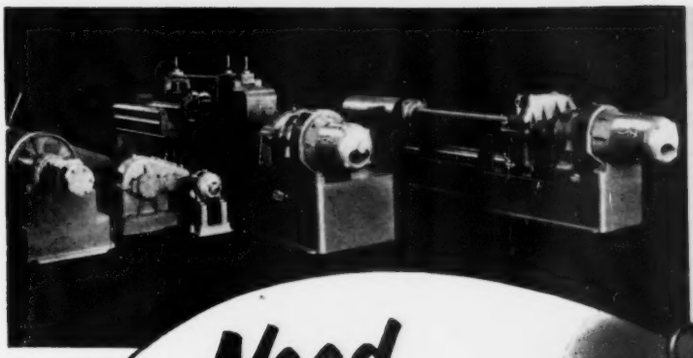
He said E. R. Collins, traffic manager of the Port of Lake Charles (La.) and prior to that with Santa Fe Railway for many years, has been named traffic manager for the new company.

A. G. Natwick, the resident manager, recently went to Scandinavia, his mission being to observe operations and new types of equipment there, including the Swedish chlorine dioxide bleaching processes which are used in both sulfite and kraft mills.

John S. Hartman, who is assistant manager and chief engineer for East Texas Pulp & Paper Co., moved to his post this summer from Kalamazoo Vegetable Parchment Co., Parchment, Mich., where he had been for seven years. Prior to that he was in the Kalamazoo Valley industry.

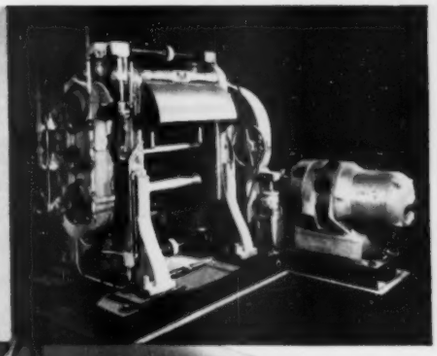
Dryden Sale Arranged to Anglo-Canadian

An arrangement through which majority shares of Dryden Paper Co. will be purchased by Anglo-Canadian Pulp & Paper Mills, Quebec, with the same offer to be extended to all other Dryden shareholders in Canada, has been announced in Montreal by J. R. S. McLernon, a director of Dryden, who says that the price is $35 cash, plus a share of the capital stock of Anglo-Canadian.



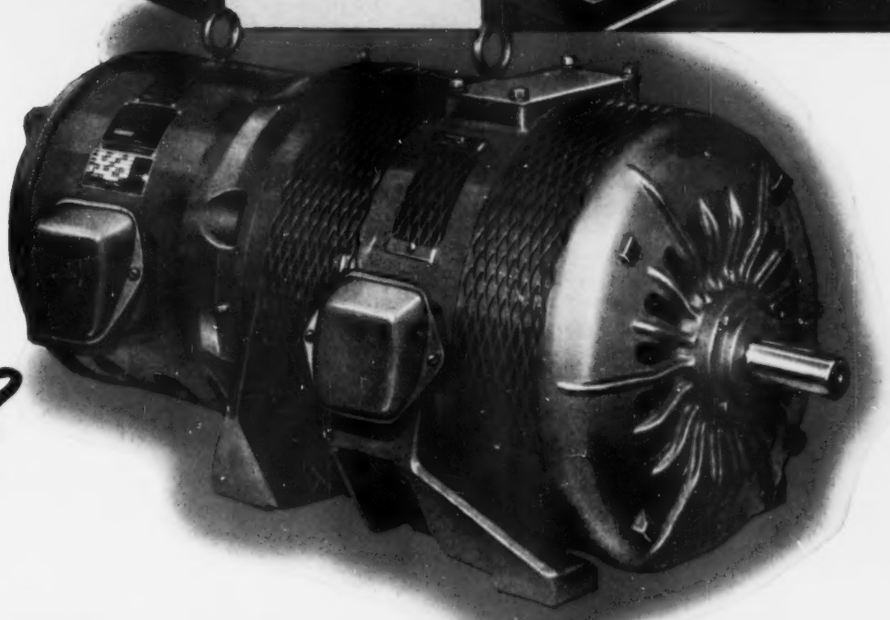
Ajusto-Spedes are used on the slitting and rewinding line in the metal fabricating industry.

Here, Ajusto-Spede is used on special calender roll in the rubber industry.



Need stepless adjustable speeds with A.C. power?

Here's your answer



Louis Allis Ajusto-Spede

Ajusto-Spede gives you a complete, packaged A.C. adjustable speed drive — 1 to 75 HP. To help you meet your specific design needs, it provides:

1. Accurate Control! The tachometer feedback circuit maintains close regulation over the entire speed range.

2. Flexibility! Many modifications are available: Eddy current brake, for fast, smooth braking. Torque limit control for controlled acceleration and overload protection. Threading, inching or jogging, and many other special control features. Speed ranges up to 17:1 available.

3. Compactness! Installation is simple — often the complete drive can be mounted on or inside the driven machine. Small electronic control panel and pushbutton station can be mounted at any convenient location.

Typical Ajusto-Spede applications include printing presses, extruders, mixers, ironers, calender rolls, punch presses, etc. Investigate the advantages of applying Ajusto-Spede to *your* particular problem. Write for complete information or contact the Louis Allis District Office nearest you.

AS-101

THE LOUIS ALLIS CO., *Milwaukee 7, Wisconsin*

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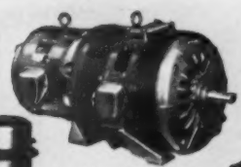
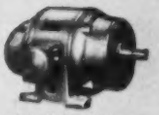
Extractor Motor with Integral Blower



Ajusto-Spede with Eddy Current Brake

Special Arbor Type Motor



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Standard or special — we build it. Whatever electrical or mechanical modifications or features you need, there is a Louis Allis motor that will do your toughest jobs better.

STATE DEPARTMENT'S VIEWS ON ALASKA

THE JAPANESE PLAN

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IN THE VIEW OF THE STATE DEPARTMENT of the U. S. Government, it has been apparent that the Japanese-sponsored project for a woodpulp-lumber operation in Sitka, Alaska, would:

1. "Materially assist the Japanese economy, and at the same time
2. "Be of real benefit in the economic development of a self-sustaining economy in the Territory of Alaska."

These important conclusions summarized a reply to an inquiry which PULP & PAPER magazine addressed to Secretary of State Dulles.

Last month PULP & PAPER published exclusive reports from Japan on progress of the organization of the Japanese company. It also published statements from the U. S. Department of Commerce and from a vice president of the Export-Import Bank of Washington, both of which expressed an intention to consider any American interests' objections to the plan and "legitimate American interests."

Government May Cut In

This month come further reports to PULP & PAPER from Japan that the Japanese government is considering an appropriation for the Alaska venture. Progress in Japan on this undertaking has moved more rapidly than is commonly known in America.

There was an unconfirmed report reaching the State Department in Washington that a New York syndicate is already in process of organizing an American company to establish a mill in Sitka, and that Japanese interests have indicated a willingness to subscribe a large capital stock.

The State Department also learned that some American pulp operators have expressed concern that in the contractual arrangement between the American company and the Japanese interests, the benefits may be siphoned off through a low price structure, which would thereby place American mills in an unequal competitive position due to the tax situation. Therefore, these American operators suggested that provision be made through the Internal Revenue Bureau to insure any pulp or other product going to Japan be valued at the prevailing market, regardless of lower contractual price.

The letter to PULP & PAPER, which outlines fully the State Department thinking at this point, is from Willis C. Armstrong, acting director, Office of International Materials Policy. Addressed to the editor, it follows:

DEPARTMENT OF STATE
WASHINGTON

"My dear Mr. Wilson:

"I refer to your letter of July 10, 1953 addressed to the Secretary of State, regarding the establishment by Japanese interests of a pulp and lumber operation in Alaska. In replying I shall do my best to give you as clear and complete a picture of this matter as possible.

"Japanese interest in supplies of forest products from foreign sources dates back several years and arises from the simple fact that prewar sources of forest products are no longer available to Japan. Japanese domestic resources are completely inadequate for the requirements of the country, and are being over-cut at an alarming rate at the present time. Consequently, the Japanese Government has expressed a profound and genuine concern over the matter and has sought actively to find a solution.

"In Oct. 1952 a Mission representing the Japanese Government and Japanese pulp and timber industries came to Washington to determine the feasibility of establishing a sawmill in Alaska from which substantial quantities of sawn lumber could be exported to Japan. The Mission also considered the possibility of the establishment in Alaska at a later date of a pulp mill to help meet Japan's pulp requirements. The enclosed copy of the Department's Press Release No. 800, October 10, 1952, describes in detail the nature and circumstances of the discussions held at that time between the Japanese Mission and interested United States Government agencies (see Sept. issue and previous issues).

"In addition to discussions with the United States Government, members of the Japanese Mission carried on extensive conversations with private United States financial, legal and industrial groups regarding the purely commercial phases of their proposed venture in Alaska.

"Early in January of this year a new Mission, composed of technical experts representing the Japanese Government and Japanese pulp and lumber industries, was sent to study the technical questions involved in lumber and pulp enterprises in Alaska, British Columbia and the United States. It is the Department's understanding that upon completion of its survey in Alaska the Technical Mission

DEPT. OF DEFENSE SEES NO THREAT

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF CIVIL AFFAIRS
AND MILITARY GOVERNMENT
WASHINGTON 25, D. C.

4 September 1953

Editor Pulp and Paper
1791 Howard Street
Room 308
Chicago 26, Illinois

Your letter of 27 July 1953 to the Secretary of Defense, requesting comment concerning a recently announced proposal to permit investment by a Japanese corporation in an American lumbering and pulp enterprise in Alaska, was referred to this office for reply.

Because of the interest of the Department of Defense in all matters pertaining directly or indirectly to our country's security requirements, the Department was consulted when the investment plan was under consideration by interested agencies of the Government. On the basis of thorough review and evaluation of all pertinent factors, it was concluded that proper development of the plan would not adversely affect U. S. defense interests. In reaching this conclusion the Department weighed such defense-related factors as the need for strengthening the economy of Alaska as a means of stabilizing the civilian population in Alaska and the continuing need for developing resources contributing to the defense requirements of the free world.

Please be assured, therefore, that the Department of Defense did not overlook the importance of Alaska and its forest resources when it was consulted with respect to the proposed investment proposal.

Sincerely yours,

HAROLD R. GARRETT
Executive

WOOD PULP
PAPER

Offices and representatives in 60 cities in the United States, Europe, Latin America, Africa, and Asia

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investigated further the possibilities of utilizing the existing sources of lumber and pulp supplies in Western Canada and in our own Pacific Northwest.

"On June 3, 1953, a meeting was held in Japan by interested Japanese Government agencies and private firms to discuss further the possibilities of establishing a saw and pulp mill in Alaska. The principal result of this meeting, which was held under the auspices of a private organization, the Forest Counter-Measures Council, was the formation of a six-man organizing committee. This committee developed a preliminary organization plan which was sent out by the Forest Counter-Measures Council to 19 pulp manufacturing companies, 13 synthetic fiber companies and 2 lumber companies, inviting their participation. The proposed enterprise, tentatively called the Alaskan Pulp Company, would be capitalized at 1.5 billion yen ($4,167,000), consisting of 3 million shares valued at 500 yen each. In addition, the company would borrow 3.63 billion yen ($10,083,000) from the Export-Import Bank of Japan, bringing operational funds to a total of 5.13 billion yen ($14,250,000).

"According to the plans of the Forest Counter-Measures Council, the proposed Alaskan Pulp Company would join with a United States company in establishing a United States corporation, tentatively named the Sitka Lumber and Pulp Corporation, with capital of $15,000,000. Of this amount, $12,000,000 would be supplied by the Japanese group and $3,000,000 by the United States group. Furthermore, the Japanese hope that this new corporation, when formed, will be able to borrow $30,000,000 from banks in the United States. Total operational funds would then be $45,000,000. If the corporation is in fact organized the board of directors will be elected in proportion to the amount of money invested in the corporation by the two companies.

"After formation of the United States corporation it would initiate a sawmill operation. The Japanese hope that lumber operations can start by the end of 1953. The wood scrap from this operation would be compressed and sent to pulp mills in Japan. Further plans provide that a pulp mill with a capacity of 100,000 tons per year will be started during the second year of operation, and completed within three years. The corporation would reach full operating capacity during the fifth year of operation.

"The activities of the United States Government in connection with this purely commercial investigation have been limited to extending those courtesies normally shown to any foreign group interested in making investments in the United States or its possessions. No suggestion of United States Government financing has been made by either Japanese or American officials. The Department has no knowledge of any approach to the United States Export-Import Bank. Press reports of such approaches may arise from the fact that the Japanese interests apparently intend to use the Export-Import Bank of Japan.

"In your letter you express concern, from the standpoint of national defense, at the prospect of the Japanese being allowed to manufacture for their own use 100,000 tons of pulp annually from Alaska's forest reserves. The significance of this quantity of pulp for the United States, however, should be measured in terms of our annual imports, in recent years, of between 1.7 and 2.3 million tons, which have supplemented domestic production ranging from 12.2 to 16.5 million tons annually.

"Against this statistical picture, I should like to suggest the importance, as has been pointed out by the Department of Defense, of having in Alaska a stable civilian population, in order to strengthen the defense of the Territory. The United States Forest Service, which manages the Tongass National Forest, has long sought to utilize such national forest reserves as a means of attracting permanent industries and a stable civilian population to the Territory. For many years the Forest Service has given wide circulation to news stories, magazine articles, proposals and prospectuses on the possibilities for major pulp plants in Alaska; it has systematically made full information available to pulp, paper and lumber executives, newsprint consumers, and other industrial leaders whenever there was an indication that such persons might be interested in the development of a forest product enterprise in the Territory. All qualified parties, and in particular United States investors, are extended the opportunity to contribute to the economic development of the Territory. It is interesting to note, in this connection, that current Japanese plans for the proposed project provide for participation by United States interests.

"It has been apparent to the Department that the project, if developed, would materially assist the Japanese economy and at the same time be of real benefit in the economic development of a self-sustaining economy in the Territory of Alaska.

"Sincerely yours,

"Willis C. Armstrong (signed)
Acting Director, Office of International Materials Policy."

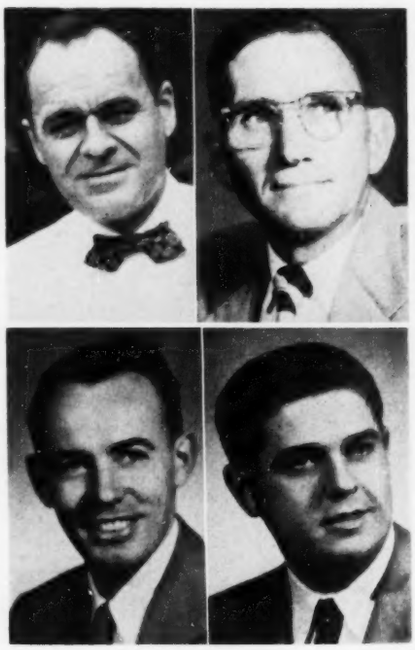
Further Reports

The Tokyo *Evening News*, dated Aug. 27, stated that the Japanese Government is studying appropriating $4,400,000 in the next foreign exchange allocation budget as an initial investment in the development of forestry resources in Alaska.

A PULP & PAPER correspondent in Tokyo quoted Japan's head of the No. 1 Section of MITI as saying that the first step would be to secure a mill site and water rights for the building of a sawmill, and it is felt by the promoters of the project that then it would not be "difficult" to go ahead and build a pulp mill.

One Japanese viewpoint, as reported from Tokyo, is that the American corporation would make little or no profit out of lumber and pulp shipments to Japan, and would thus avoid paying any large taxes to the U.S., and secure lumber and pulp for Japanese industry at prices much below those that American manufacturers could afford to sell to Japan. This view is that the corporation in the U.S. to operate this project would be exporting at practically cost.

PERSONNEL NEWS AT NORTHERN



EDWARD E. DEN DOOVEN (top left), veteran General Supt. of Northern Paper Mills, subsidiary of Marathon Corp., Green Bay, Wis., now has a newly named Assistant Gen. Supt.—JOHN E. GOODE (lower left), a Purdue graduate at Northern since 1947, where he was recently Asst. Chief Engineer.

ROYAL ROBILLARD (top right), is Master Mechanic at Northern, with full responsibility over maintenance and shop, a responsibility he formerly shared with ROBERT L. COWLES JR. (lower right), who has been promoted to Asst. Chief Engineer, serving under Chief Engineer H. W. Gochnauer. Mr. Cowles graduated from Northwestern in 1948 when he joined Northern. Mr. Robillard has been with Northern 38 years.

Regarding Linings for Kraft Digesters

Harry E. Bukowsky, plant engineer, Crown Zellerbach Corp., Port Townsend, Wash., has requested that in reference to his article on digester linings (p. 55, Sept. 1953 issue), his statement that "so far as was known in 1945, no kraft digester, with years of service, had even been lined with a corrosion-resistant material" should be qualified.

His entire article was concerned with metallic linings such as stainless steels and steel alloys, but he wishes to add that "in 1945, of course, some kraft digesters, with service records, had been lined with carbon brick."

Trees Now Accepted As Loan Collateral

The Forest Credits Bill, discussed on page 120 of the September issue of PULP & PAPER, which recognizes managed forest tracts as acceptable collateral for loan purposes at national banks, has been signed by President Eisenhower.

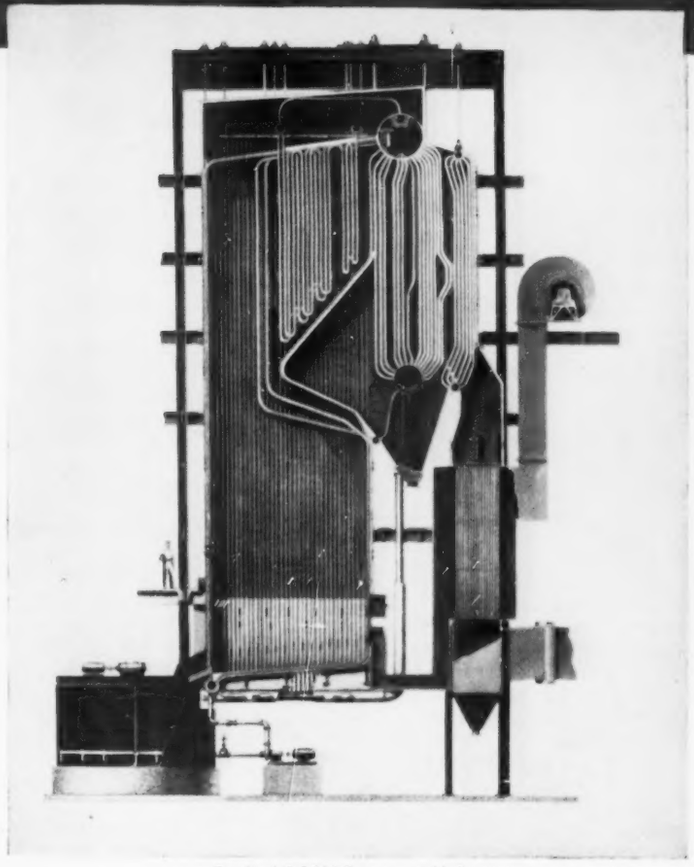
This is an amendment to the Federal Reserve Act. Early sponsors of the measure were Pacific Northwest bankers and the Western Forestry and Conservation Association.

4 B&W RECOVERY UNITS Serve Charleston Mill of West Virginia Pulp & Paper Co.

Four B&W Recovery Units are establishing high chemical recovery rates at the Charleston, S. C., mill of West Virginia Pulp & Paper Co. The first B&W Recovery Unit for Charleston was ordered in 1936, and repeat orders were placed in 1940, 1945, and 1948. The four units have a combined capacity of 8.15 million pounds of steam per day.

Preventive cleaning of gas passages, practically all of which is done automatically, helps to keep the furnaces operating at high efficiency.

The performance record of B&W installations such as those at Charleston puts the B&W organization in a good position to solve your recovery problems. The Babcock & Wilcox Company, Boiler Division, 161 E. 42nd Street, New York 17, N. Y.



Typical B&W Recovery Unit

BABCOCK & WILCOX

P-772

SIX MOS. SALES-EARNINGS

REPRESENTATIVE COMPANIES—SIX MONTHS RECORD FOR 1953

	Net Sales (000)	Income Bef. Taxes (000)	% Of Sales	Net Income (000)	Net Per Share
Brown Co. (fiscal yr. 11/30) - (1st & 2nd Qu.)	$ 36,906	$ 2,926	7.9	$ 1,475	$ 0.49
Puget Sound Pulp and Timber Co.	10,206	NA	-	1,357	1.74
Rayonier Co.	36,084	10,305	28.6	5,333	2.37
Mac Millan & Bloedel Co., Ltd. (fiscal yr. 9/30) - (2nd & 3rd Qu.)	66,431	14,207	21.4	7,208	1.36
Abitibi Power & Paper Co., Ltd.	54,303	10,585	19.5	4,763	1.07
Eastern Corp.	10,516	789	7.5	400	1.06
Kalamazoo Vegetable Parchment Co. (fiscal yr. 9/30 - (2nd & 3rd Qu.)	21,386	2,032	9.5	1,032	1.38
Great Northern Paper Co.	21,954	4,702	21.4	2,373	2.38
Diamond Match Co.	48,592	3,371	6.9	1,971	1.47
International Paper Co.	337,734	75,729	22.4	28,586	3.16
Mead Corp.	52,383	6,580	12.6	2,587	2.15
St. Regis Paper Co.	101,746	15,128	14.9	7,122	1.30
Scott Paper Co.	81,429	15,106	18.6	5,623	1.81
Champion Paper & Fibre Co. (fiscal yr. 3/31) - (4th & 1st Qu.)	63,932	8,795	13.8	4,667	2.02
West Virginia Pulp & Paper Co. (fiscal yr. 10/31) - (2nd & 3rd Qu.)	60,111	10,466	17.4	5,566	5.87
Southern Advance Bag & Paper	9,789	2,260	23.1	1,114	1.26
Union Bag & Paper Corp.	52,067	11,355	21.8	5,150	2.91
Container Corp. of America	92,722	13,998	15.1	4,914	2.39
Gair (Robert) Co., Inc.	59,483	8,945	15.0	3,226	1.48
Gaylord Container Corp.	46,035	7,838	17.0	3,511	1.30
Sutherland Paper Co.	28,439	4,687	16.5	1,500	1.66
Hammermill Paper Co.	14,851	1,293	8.7	659	0.76
Glatfelter (P.H.) Co.	8,451	1,313	21.5	574	2.51
National Container Corp.	30,869	4,585	14.9	2,098	0.64
Oxford Paper Co.	26,700	3,254	12.2	1,309	1.39
Riegel Paper Corp.	21,681	1,716	7.9	768	1.45
Warren (S.D.) Co.	23,176	NA	-	1,150	1.13
General Package Corp. (formerly Shellmar Products Corp.)	20,580	2,733	13.3	1,058	1.98
Dennison Manufacturing Co.	16,933	2,342	13.8	1,524	1.40
International Cellucotton Products	69,701	NA	-	3,519	1.48

THESE SALES AND EARNINGS reports for the first six months of 1953 (except for period otherwise indicated after company name) are from a selected group of representative pulp and paper companies. The compilation was especially prepared for PULP & PAPER by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct, no guarantee is given as to their accuracy.

An attempt was made here to group companies according to type of product or areas of operation, etc.

Market pulp companies are listed first, although some have other products such as lumber, paper, etc. Next are Northern integrated mills. Next come a group of integrated companies with mills in both North and South.

Paperboard mills follow—Southern Advance to Sutherland, particularly, and National Container and General Package, in the next group. A miscellaneous group is headed by Hammermill. The last three—General Products, Dennison and Int. Cellucotton—are considered significant in the converting field.

Dollar figures are in thousands of dollars.

NA—means not available.

New Weyerhaeuser Mill Starts Rolling

Weyerhaeuser Timber Co.'s new 250 ton market bleached kraft pulp mill on the Snohomish River, Everett, Wash., made a smooth startup on Aug. 26 and after the Labor Day shutdown was in regular production. It is producing pulp on a 151 in. Rice Barton Fourdrinier and Minton dryer.

Not a single tree is cut for this mill, as all chips come from leftovers of four nearby Weyerhaeuser sawmills and this is believed the only chemical pulpmill in the industry without a woodroom.

Gerald F. Alcorn, construction engineer for Weyerhaeuser, directed design and engineering, and was highly praised by Howard Morgan, v. p. and pulp division manager, on completion of the mill.

Russell J. LeRoux is now manager, sulfate and sulfite mills, Everett branch, Weyerhaeuser, directing both mills there. L. G. (Jerry) Willins, former operating and technical superintendent for Oxford in Maine, is mill superintendent. John McEwan, is technical director (he was succeeded at the sulfite mill as technical director by Al Graff). C. L. (Bill) Carns, former assistant to Mr. Alcorn, is plant engineer. Evan Wood heads personnel and safety supervision at both mills and Don McPhee is office manager of both mills.

New Charleston Plant

A $2,250,000 roofing paper and granule plant will be built at Charleston, S. C., beginning this fall, for Bird & Son, Inc., to serve the Southeast. It will have a 500 ft. long roofing paper machine, said to be the longest in the industry.

KIMBERLY-CLARK'S EXECUTIVE REALIGNMENT

EXECUTIVE CHANGES IN KIMBERLY-CLARK CORP. (left to right):

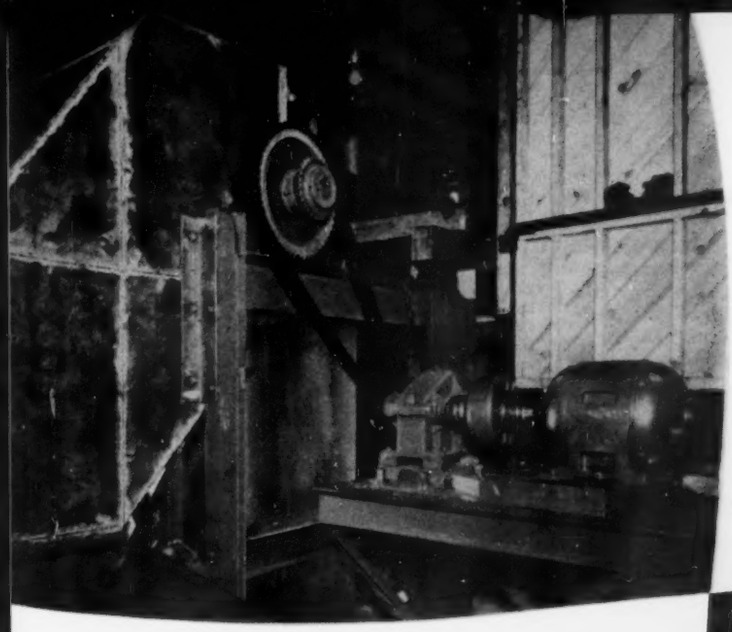
COLA G. PARKER, President for past 11 yrs. and officer for 15, becomes Chairman of Board, office last held by late F. J. Sensenbrenner, and will serve as chief executive and policy officer.

JOHN R. KIMBERLY, new President, and second Kimberly to hold that title (his grandfather, John Alfred Kimberly was a founder in 1872 and first Pres.). The new President becomes chief administrative officer. Graduate of MIT in 1926, he worked in Kimberly, Neenah and Niagara, Wis., mills in operations, served WPB during World War II, finally as its Asst. Director General, and was K-C's Vice Pres.-Sales from 1943 until elected Exec. V.P. last fall.

W. R. (BILL) KELLETT, elected new Executive V.P. He graduated from U. of Wisconsin in 1922, grew up with new K-C products from paper rugs to wadding etc., was Mgr. of Neenah mills, Gen. Supt. of all mills and lately V.P. of Manufacturing.

FRED S. SEABORNE, elected Vice Pres. of Manufacturing. He broke in via the Niagara Falls lab in 1923, was production chief at Kapuskasing, Ont., Chief Mill Mgr., Gen. Supt., and Assistant V.P. since 1951. He's a brother of Exec. V.P. Charles R. Seaborne of Thilmany Pulp & Paper.

W. H. SWANSON, elected Vice Pres. in charge of Research and Development. He had been Asst. V.P., too., and is a world authority on pulping processes and has rounded out 25 years with K-C. He returned Aug. 19 from the international cellulose meetings in Sweden. He graduated from U. of Minnesota, earned higher degrees at Wisconsin and was connected with the U.S. Forest Products Lab in Madison for 6 years. He was a TAPPI President and has contributed much to sulfite pulping knowledge, especially.



EXTENSIVE ACCEPTANCE!

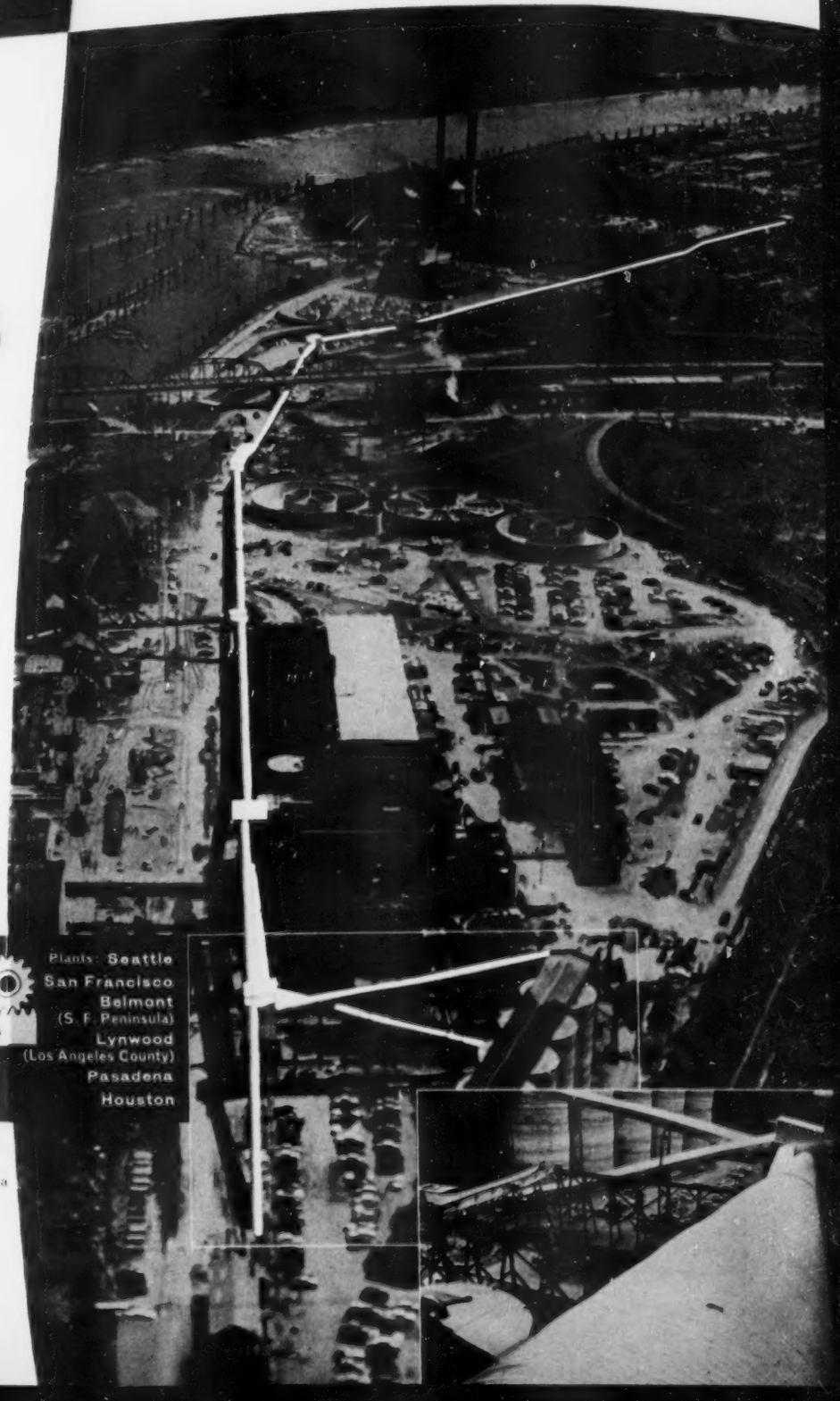
WEYERHAEUSER'S NEW MILE-LONG CHIP CONVEYOR IS POWERED BY

WESTERN GEAR DRIVES

13 Western Gear Works Speed Reducer installations were selected for Weyerhaeuser's new mile-long conveyor at their new sulphate pulp mill in Everett, Washington.

These units, and many others, are a tribute to the extensive product acceptance given to Western Gear Works over a period of many years by the Weyerhaeuser Timber Company.

A complete line of speed reducers in a full range of ratios and horsepower is available – plus the added value of Western Gear Works engineering assistance. For information regarding your mechanical power transmission problems, please write, wire or phone our nearest plant or office.



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117 N. Palmer St., Houston 3, Texas

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Engineering & Machinery Ltd., 1366 W. Broadway, Vancouver, B. C.

CHARMIN PAPER MILLS ADDITIONS

Charmin Paper Mills (formerly Hoberg), at Green Bay, Wis., is making good progress on its $2,500,000 torula yeast plant for utilizing sulfite waste liquor and has announced a contract and agreement with Red Star Yeast & Products Co., Milwaukee, as a major outlet. The latter will conduct research for new yeast products to be made from it, too.

The mill will produce 10,000,000 lbs. per year. J. M. Conway, president, recently named Walter Jacobs as project engineer and, later to be, yeast plant superintendent. He was a wartime flyer, served at the Institute of Paper Chemistry, with the Lake States Sulfite Pulp Mfrs. Research League, and more recently has been superintendent at the yeast plant in Rhinelander.

Infilco Inc. is increasing water softener plant capacity at the mill from 3,200 to 5,000 gpm to permit sending steam to the yeast plant from the power plant. A 3,150 ft. tunnel for steam lines was being completed as this was published.

Scott-Taylor Co., Ashland, Wis., is building two 125,000 gal. liquor storage tanks. International Engineering, Dayton, O., is building stainless steel agitators for the tanks. Northeastern Boiler & Welding, Green Bay, is building 24 ft. high stainless steel tripper columns, 5 ft. diameter. The plant will have 2-story building, 165 ft. long, 82 ft. wide, 40 ft. high.

Major improvements also have been made at the sulfite mill:

A Carrier refrigerator unit was installed to cool makeup water for the acid plant. City water enters at 60°, to be cooled to 240.

A new Chemipulp Process Inc. spray cooler cools gas entering a sulfur combustion chamber from 2,000° F to 155-175°. This is to eliminate sulfur deposits that formerly had to be cleaned out of the Jenssen cooler and to reduce sulfuric acid produced by the gas.

WESTINGHOUSE INDUSTRY SECTION CHIEF

C. P. WALKER, newly named as manager of the general industries section in the industrial department of Westinghouse Electric Corp.'s apparatus division in East Pittsburgh, Pa., will have charge of coordinating the development and sale of Westinghouse equipment for the pulp and paper industry.

Recalling that in pre-war years he served the new big paper mills in South Carolina, Mr. Walker told PULP & PAPER:

"I am very happy to be affiliated with our company's activities in this very important industry, and I hope that our company can continue to make real contribution to the progress of the pulp and paper industry."

His appointment was announced by K. M. Patterson, manager of the Westinghouse industrial department.

Mr. Walker graduated in e. e. at Clemson College in 1933 and joined Westinghouse as a graduate student. He then held sales posts in Georgia and North and South Carolina.

Then in 1940 he went to Columbia, S.C., to be field representative there, responsible for commercial relations with both the Georgetown mill and West Virginia Pulp & Paper Co.'s mill at Charleston, S.C. It was during this period that Georgetown's capacity was doubled.

After military service in the war, Mr. Walker returned to a Westinghouse sales post in Atlanta. In 1947, he was transferred to the general mill section of the industrial department, specializing in textile industry sales coordination.

C. P. WALKER, new Manager of General Industries Section, Industrial Dept., Westinghouse Electric Corp.—used to serve Southern mills.

KEN A. JOHNSON, who has joined *PULP & PAPER* staff. Comes from a leading pulp and paper company.

Ken A. Johnson Joins *Pulp & Paper*

COMING FROM ONE of the leading pulp and paper companies of the continent, Ken A. Johnson has joined PULP & PAPER as an advertising representative, based in Chicago, where editorial headquarters are located.

Born 25 years ago last Apr. 16 at Finley township in the Wisconsin River Valley, where his family logged and farmed for three generations, he studied engineering at the University of Wisconsin 2 years. Then came a year and a half with famed General Patton's 3rd Armored Division as sergeant-major of its personnel disposition board.

He then attended the University of Arizona for a year and a half. He was a star varsity baseball pitcher at both Wisconsin and Arizona.

His only post-college employment has been with Nekoosa-Edwards Paper Co. for the past two years, where he was in personnel and safety administrative work, also in community relations activities. He also conducted employe information panels. During this period he was a Sunday School superintendent.

His experience at Nekoosa-Edwards brought him close to both sulfite and kraft pulping, bleached and unbleached, and manufacture of a wide variety of paper grades.

UNIVERSITY OF MAINE FOUNDATION INCORPORATED

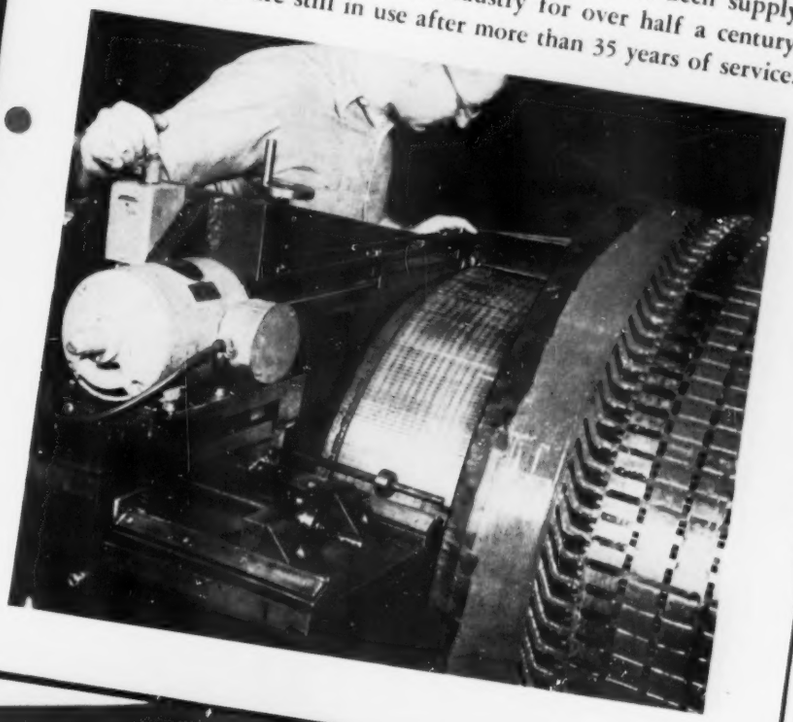
OFFICIAL INCORPORATION OF U. OF MAINE PULP & PAPER FOUNDATION was effected at this meeting at Orono, Me. The Foundation was established in 1950 to assist undergraduates in pulp and paper technology and to advance research. Present at signing were (clockwise around table from left): M. C. McDONALD, President, Great Northern Paper Co.; ASHLEY S. CAMPBELL, Dean, College of Technology; WM. CHISHOLM, Assistant to President, Oxford Paper Co.; TED SPEAR, Vice Pres., Oxford Paper Co.; RALPH A. WILKINS, Vice President, Bird & Sons; L. S. HATCH, Mill Manager, Penobscot Chemical Fiber Co.; A. A. HAUCK, President, University of Maine; W. E. PARSONS, President, Keyes Fibre Co.; LYLE C. JENNESS, University of Maine; J. L. OBER, Vice Pres., Scott Paper Co.; JOHN B. CALKIN, Assistant to Pres., Foster D. Snell, Inc.; GEORGE BEARCE, Manager, St. Regis Paper Co., Bucksport, Me.; PHILIP S. BOLTON, Director of Research, Robert Gair Co.; C. S. PEABODY, Bangor, Me., attorney; CLIFFORD PATCH, Technical Director, Eastern Corp.; FREDERICK A. SODERBERG, Vice President, F. C. Huyck & Sons; HAROLD HOLDEN, President, Eastern Corp.; HENRY FALES, Vice Pres., St. Croix Paper Co.; and L. G. MANGAN, Manager, International Paper Co., Livermore Falls, Me.

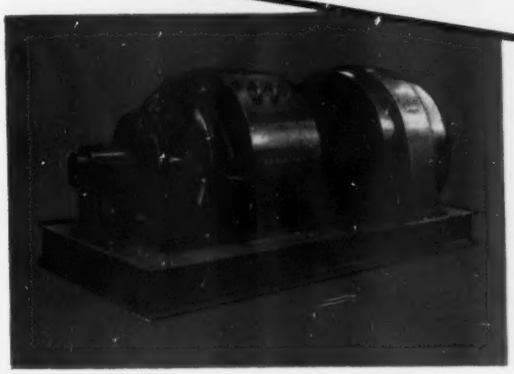
ANOTHER* EXAMPLE OF ELLIOTT Excellence

*Precision Workmanship

in the careful undercutting of commutator mica segments, is characteristic of the painstaking attention to detail which insures dependable performance in Elliott large direct-current motors and generators.

This extreme care in all stages of design and manufacture, is traditional in Elliott machines. Elliott shops have been supplying direct-current machines to industry for over half a century. Some of them are still in use after more than 35 years of service.





At left is shown an Elliott 500-kw, 900-rpm motor-generator set, driven by 750-hp synchronous motor.

For full details on Elliott Fabri-Steel motors and generators, call your local Elliott representative or write the Elliott Company, Ridgway, Pa.

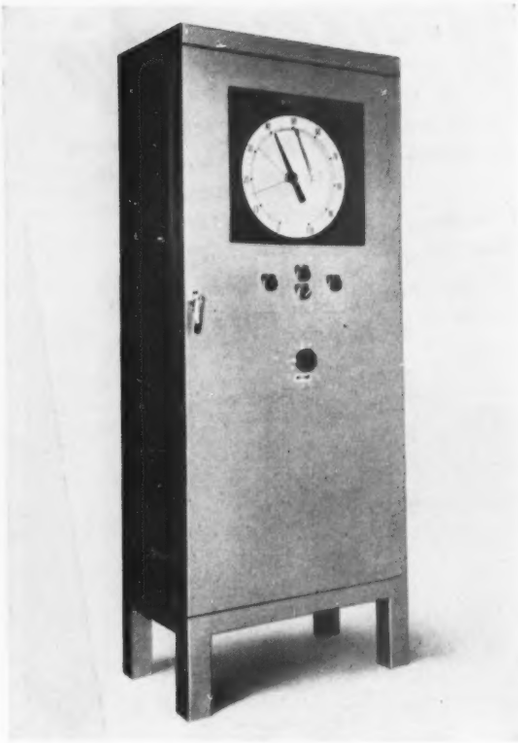
Elliott FABRI-STEEL MOTORS AND GENERATORS

R3-13

ELLIOTT Company

RIDGWAY DIVISION

FOR MOTORS 1-200 HP. CROCKER WHEELER DIV. AMPERE, N. J.



Moist-O-Graph measures moisture content *directly*

Through continuous, accurate recording of sheet moisture content, the *Moist-O-Graph* gives machine operators a direct guide to maintaining uniform moisture in finished sheet. It measures electronically, utilizing electrical conductivity as a reliable index to moisture content. Integral range switch permits changing range to work with varying grades of paper. Big indicating scale is easy for operators to read at a distance. Signal lights tell if sheet is normal, too wet, or too dry. Proved by years of service, the *Moist-O-Graph* is installed and calibrated in your own mill by Honeywell engineers. For further information, see Data Sheet 2.9-5a.

Honeywell instruments

Wet End Instrumentation

Fully automatic control at the wet end of the machine assures better quality sheet and longer machine life. Honeywell instrumentation includes:

pH Control: an *ElectroniK* pH controller automatically regulates the addition of alum, to maintain constant pH of stock . . . cuts alum consumption, increases wire life, produces better sheet.

Temperature control: to maintain more uniform drainage.

Vacuum Recorders: for suction boxes and suction couch roll.

Level Recorders: for white water chest, machine chest, wire pit and head box.

Dryer Instrumentation

In addition to the *Moist-O-Graph*, Honeywell offers a complete selection of instrumentation for all phases of dryer control . . . from which individual systems are engineered to your specific requirements.

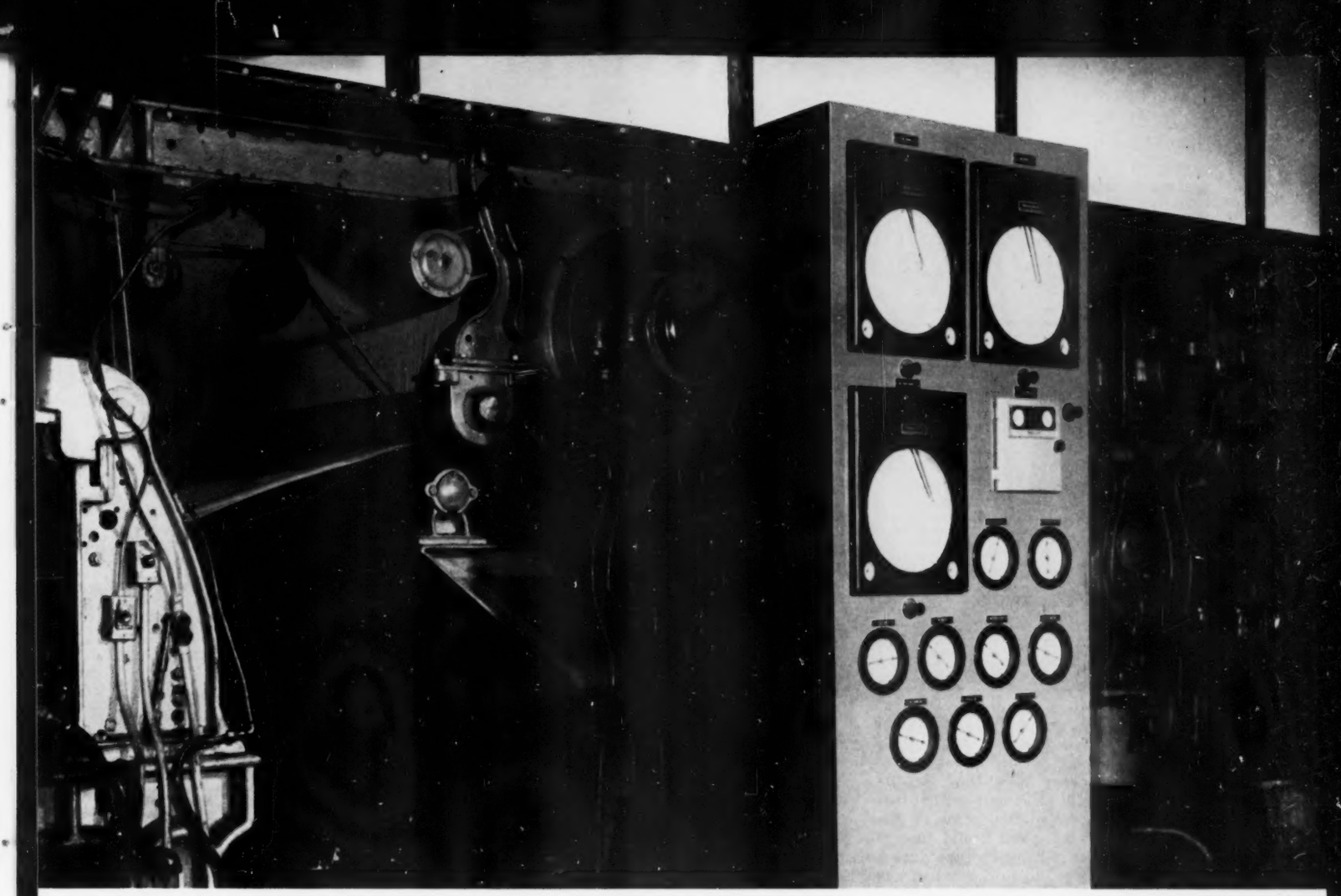
Dryer temperature: direct control by means of *ElectroniK* instruments or Brown thermometer controllers.

Steam Pressure: control of pressure or differential pressure by Brown pressure gauges, in a variety of ranges . . . or the rugged, non-indicating Honeywell Pressure Pilot.

Steam flow: evenly graduated flow meters for steam cost accounting, and square-root scale type for flow control.

Speed Recorders: *ElectroniK* instruments with tachometer sensing elements provide accurate records of machine speed.

Control valves: Honeywell Series 700 wide-band proportioning valves incorporate every feature of quality construction and performance for accurate, dependable control.



dryer control panel *includes (at top) Honeywell thermometer controllers for temperatures of two dryer sections, differential pressure controller, and Honeywell Pressure Pilot for regulating steam pressure of felt dryer.*

can increase efficiency *in your paper machine room*

CLOSER CONTROL of operating variables—through Honeywell instrumentation—is setting standards of production, quality and efficiency in scores of paper machine rooms. Available from Honeywell is a complete line of recording and controlling instruments for regulating moisture content of sheet, temperature of dryers, steam pressure, flow, liquid level, pH, vacuum—and a selection of control valves, primary elements and accessories.

To put these instruments to work in your mill, Honeywell offers the extensive experience of its Application Engineering staff, who have helped the paper industry to pioneer many advanced uses for modern instrumentation. And to keep your controls in peak condition, you can rely on prompt, efficient service from the more than 110 Honeywell service centers throughout the country.

Your local Honeywell sales engineer will be glad to discuss your instrumentation requirements—for your machine room and for the rest of your mill. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4438 Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA:** Write for Bulletin 2802, "Instrumentation for the Paper Industry", and for Data Sheets on specific applications.

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

NEW YORK MILL OF TOMORROW

AUTOMATIC QUALITY CONTROL FEATURES

***Above, left, is the trademark for Newton Falls Papers**

SOMETHING MORE than five years ago PULP & PAPER (in a feature story in its March 1948 issue) termed the plant of Newton Falls Paper Mill, Inc., Newton Falls, N.Y., "A Mill of Tomorrow." At that time it was suggested that some of the developments at this plant would become standard in other mills of its type during the next several years, so that what was being seen at Newton Falls was really a peek into the future.

On a recent return visit to Newton Falls and the little mill community nestling in the Western slopes of the Adirondacks, it was discovered that there is no slackening of endeavor to bring new and sound engineering developments to this operation, so that as a result, today, it remains still properly dubbed "A Mill of Tomorrow."

Six new features of the Newton Falls mill were described in the earlier article. These dealt with:

1. The "Alphocel" process for de-inking ledger and cup stock—a process which consists basically of stock treatment with caustic and water at 160° F. in the Hydropulper; saponification of the inks in special cooking chests; and then complete washing, riffling and refining before blending with virgin sulfite pulp.

2. The "push-button" stock blending control system which permits control of water metering and flow of pulp through Hydrafiners, valves, pumps and chests from one central panel.

3. The water filtering system, which provides for water filtration through a Hardinge automatic sand filter at the rate of 2,500,000 gals. per day. The system supplies requirements of the mill and the town.

4. The "Syco" (now Moore & White product) mechanical paper machine drives which provide power to all sections of the machine in interlock and positive synchronism and in a wide range of accurate speed selection.

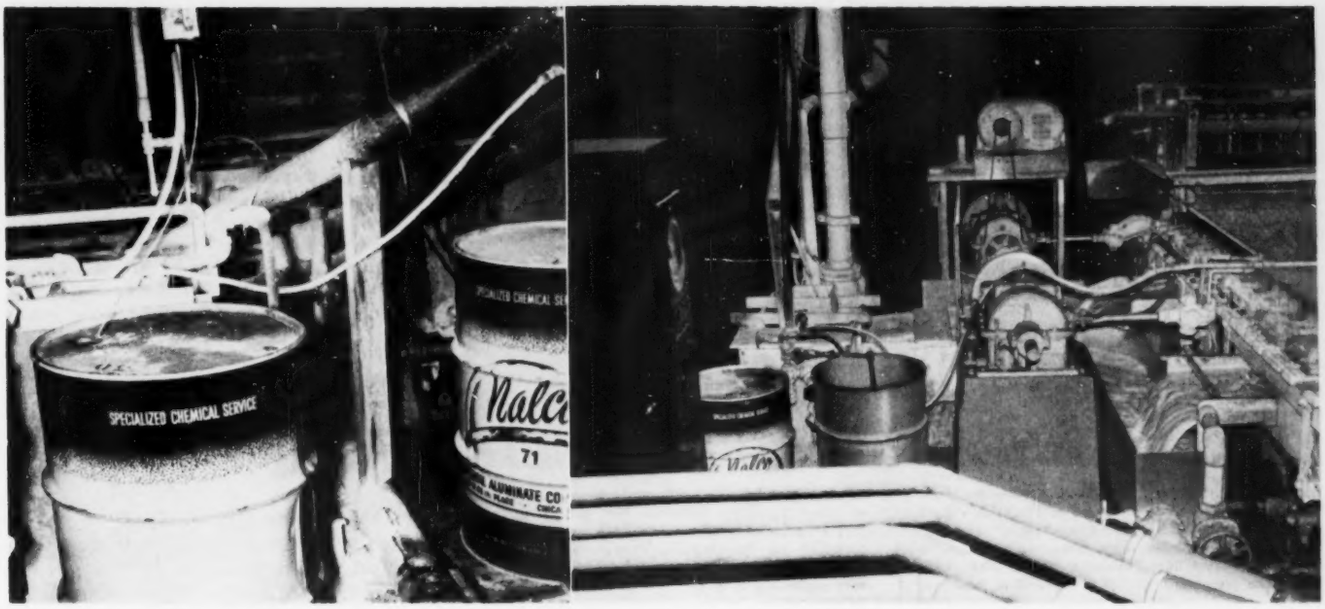
5. Automatic gloss indicating equipment which continually indicates the gloss of the paper coming through the supercalenders, thus enabling the operator to make compensating adjustments for uniformity when variations are noted.

6. Waldron "Microjet" coaters, which were the first installed in the country, and in which excess coating is planed off by means of a wide thin high-velocity jet of air, controlled through an orifice—and whose adjustments are so micro-fine that a uniform weight of coating is left on the paper web.

Before describing the new features that

RONALD W. HYNES, Pres., Newton Falls Paper Mill, Inc., is shown with the key personnel of the mill in this composite photograph. Their names are written under their pictures. Here follow their names and positions in the company and mill, reading from top to bottom in vertical columns, and across the page:

MAURICE JULIUS, Sales; ARTHUR SWANSON, Tour Boss Alphocel Plant; CHARLES W. OSBORNE, Village Construction & Maintenance Foreman; GEORGE S. CARROLL, General Supt.; MELVIN M. NOLAN, Coating Plant Supt.; ROSS F. RILEY, Production Mgr.; AMBROSE GOLDEN, Shipping Foreman; GUY L. ASHLEY, Exec. Asst. to Pres. i/c Sales; EDWARD TRUDEAU, Asst. to Mill Supt.; CHARLES H. BAKER, Asst. to General Mgr.; ALEXANDER M. ROSS, Vice Pres. i/c Woodlands & Mining Operations; JOHN YADDOW, Tour Boss Paper Mill; ESTHER C. HYNES, Cashier & Village Administrator; MICHAEL HANLEY JR., Finishing Room Foreman; JAMES SUTHERLAND, Tour Boss Coating Plant; J. WAYNE MORROW, Paper Mill Supt.; CURTIS FLETCHER, Piping Foreman; ARTHUR C. SMITH, Plant Engineer; THOMAS OWENS, Master Mechanic; WILLIAM GRAB, Auditor; OSCAR BOSLEY, Chief Electrician; JOHN SCHOCK, Treasurer; RALPH BEAULIEU, Asst. to Plant Engineer; CARL NEWTON, Mill Construction Foreman; GORDON BLACK, Tour Boss Paper Mill; JOHN D. LOHNAS, Technical Director; ATTILIO ZANDE, Unloading Foreman; EDWARD NOLAN, Finishing Room Foreman; KARL EHLERS JR., Tour Boss Paper Mill; EVERETT WILCOX, Tour Boss Paper Mill; JOHN DILLON, Yard Foreman; HUGH BLACK, Cutter Room Foreman; FRANCIS J. FOLEY, Asst. Treasurer; VICTOR CHENEY, Tour Boss Paper Mill; HUBERT VREATT, Super Calender Foreman; ROBERT VREATT, Tour Boss Coating Plant; ADAM SHELKOWICH, Tour Boss Alphocel Plant; NELSON STEPHENS, Tour Boss Alphocel Plant; GERALD J. DUNPHY, Sales; WILLIAM R. BURNS, Stockroom Clerk; EMMETT J. HODGE, Purchasing Agent; JOHN KOZIOL, Boiler Room Foreman.



LATEST CONTROL FEATURE AT NEWTON FALLS is installation of National Aluminate Corp. system for automatic feeding and mixing of defoamer. Small plastic instrument above barrel at left is set to add any amount of foam killer required, which is then mixed with water and runs into fan pump where it is mixed with stock to machine. At right is overall view at wet end showing Nalco feeding system near center and pH recorder at extreme left.

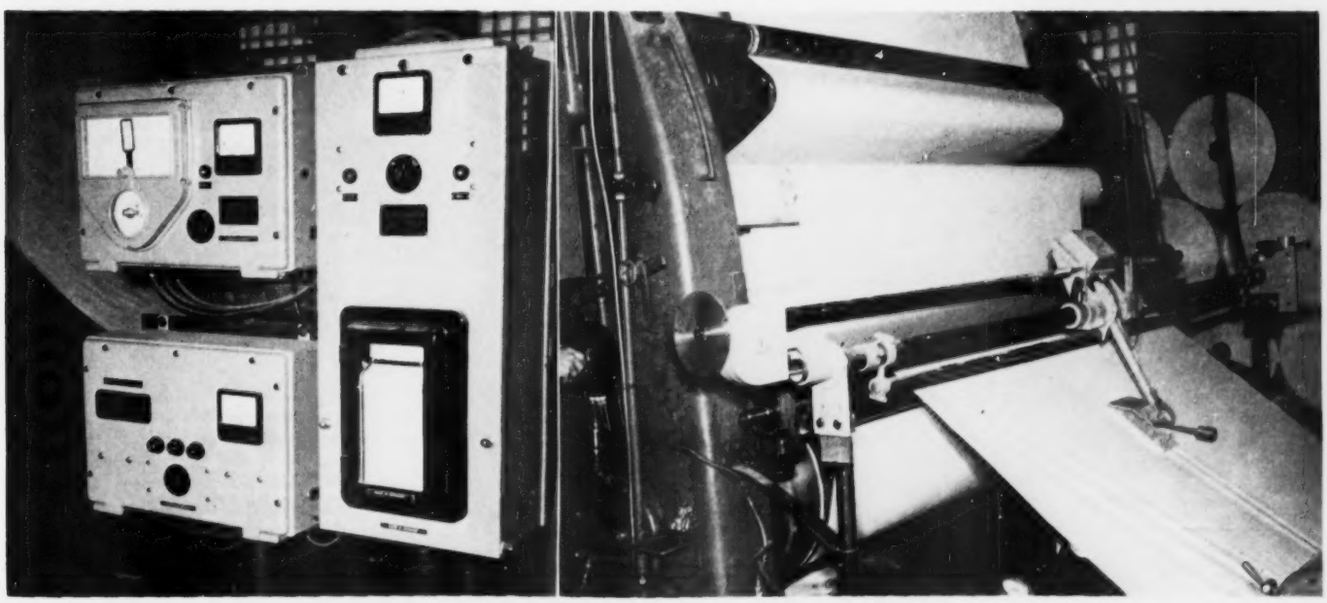
distinguish this mill, it is well to present something of the overall program which is developing under the guidance of Ronald W. Hynes, president and general manager at Newton Falls. As Mr. Hynes points out, the program is one that is being carried out by all the people at Newton Falls, and since Newton Falls is strictly a mill town, it is one that affects the whole community.

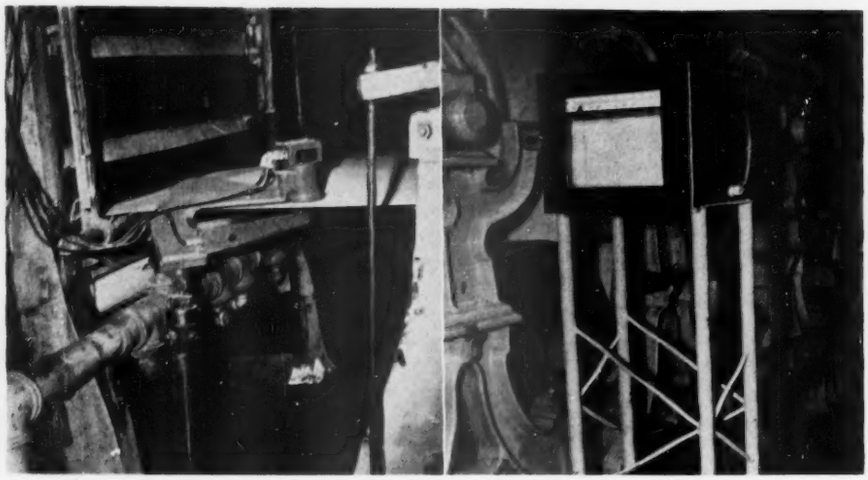
A large part of the program is modernization of housing in the town itself. The program calls for the construction of from 7 to 10 modern new homes each year until every house in the area has been replaced and each employe enjoys the full privileges of modern living. Twenty-eight new houses have been completed since the beginning of this program, and with the construction of 50 more, Newton Falls definitely will be one town in the United States without sub-standard housing. That the people of Newton Falls are already enjoying some of the most modern conveniences can be seen from the forest of television aerials which probe the sky to intercept programs from Syracuse and Utica—more than 70 miles away.

In mill expansion, more than $200,000 will have been spent from 1952 through 1953 in modernization and expansion of the Alphocel plant. The goal here is to make enough Alphocel fiber stock to handle all requirements independent of sulfite pulp. Washing equipment is being rebuilt, and all lines will have stainless steel equipment throughout. There will be two complete Shartle Hydropulping systems, so that two different kinds of stock may be washed and pulped at the same time. One complete new line is in operation and the second will be ready before the end of the year. New equipment in this plant will include two Oliver Ahlfors-type screens, one Bird screen, and complete pH control. Also being installed is a new Bird saveall.

Recently completed are new quarters for the laboratory which is being equipped with the latest in scientific laboratory equipment. This will provide space and facilities for research and development,

NEWTON FALLS MEN ARE NOT AFRAID of new ideas or new equipment. Typical of this viewpoint was installation of Hygrotester Inc. moisture testing and regulating equipment on one of their coating machines—first such installation of this German-made equipment in the country. On Hygrotester instruments at left, settings are made for machine speed and basis weight of paper, room humidity and other variables, and moisture content through the sheet is picked up by capacitor riding sheet, at right, and automatically recorded by instruments. Capacitor can be set to transverse sheet to pick up moisture readings from any section.





ANOTHER FEATURE OF CONTROL at Newton Falls involving new equipment is use of Tracerlab's Beta Gauge on each of two Fourdrinier paper machines for indicating and recording basis weight. This is one of two such installations in Upper New York State. The gauge is installed at dry end of machine, as shown at left, and automatically measures mass of sheet traveling between two gauge surfaces. This measurement is automatically transmitted and recorded on Minneapolis Honeywell "Electronik" recorder located near wet end (photo at right) so that variations may be checked by proper machine adjustment.

with most quality control work being carried out in separate quarters.

New Features at Newton Falls

New features distinguishing the Newton Falls mill that continue to make it "A Mill of Tomorrow" have to do principally with automatic quality control. Newton Falls is one of the older mills in Upper New York State, operating two Fourdriniers and turning out 72 tons of high grade papers daily. The long-range program of the present management has been to modernize, mechanize and precisely control all steps of manufacture to produce, as they term it, "Custom built papers, precision engineered."

The new features of quality control affect manufacture all the way from stock preparation through the supercalenders. Following are some highlights of these controls:

Jordan Control System: Newton Falls operates four Emerson jordans, two for each paper machine. Each set of jordans is operated by a Taylor Instrument jordan plug pressure control system from a panel board. The plug pressure in the high speed jordans is controlled automatically by air pressure according to the panel settings to maintain uniform refining of stock to the machine chest.

The jordans, it might be repeated, are part of a beater room that has no beaters. The equipment consists of a Shartle Hydropulper, Hydrafiner, a blend chest and the four jordans. Three men handle the entire stock preparation from a panel board directly in front of the blend chests. The system has now been in operation over five years and has proved itself in making for more uniform sheet quality, and as a labor-saving device.

Defoamer Control: A simple but effective setup has been accomplished at Newton Falls for automatic addition of foam killer to stock going to the fan pump. The system is one devised by National Aluminate Corp. and consists of a plastics instrument which can be set to control the amount of defoamer drawn from a drum, which is then mixed with proper amount of water and delivered by gravity flow to the fan pump. The compact unit is set up on the machine floor close to the headbox, and there is one unit for each machine.

Basis Weight Control: Newton Falls has two of the first installations to be made in New York State of the Tracerlab "Beta Gauge"—one for each machine. The instrument is placed at the dry end of the paper machine following the calender sticks and ahead of the reel. There are two gauge surfaces, with the energy source located on the top surface. The instrument is swung around so that the paper passes between the two gauge surfaces and the "mass" of the sheet is accurately measured and recorded.

The mass measurement, which is translated to terms of basis weight, is transmitted automatically to a Minneapolis Honeywell "Electronik" recorder located at the wet end of the machine. Variations are noted, and the machinetender can make the necessary adjustments to bring the stock back to required weight.

Moisture Control: First installation in the United States of the German-manufactured Hygrotester moisture-testing equipment on a coater was made by Newton Falls. This equipment is set up just ahead of the coater reel, and is designed to indicate the amount of moisture *through the sheet*, and not just surface moisture.

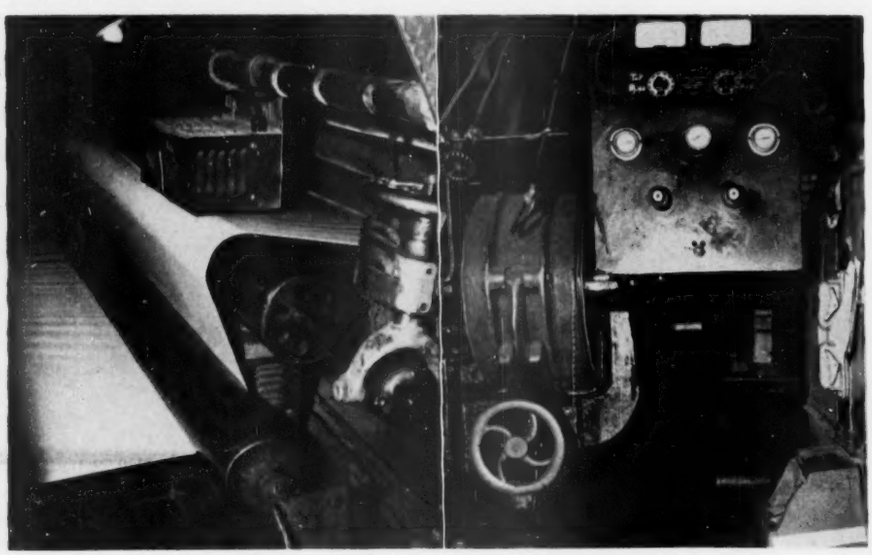
Instruments in the Hygrotester testing equipment can be graduated according to basis weight, calibrated to account for room humidity, and set according to the speed of the machine. A capacitor, which is the nerve center of the equipment, rides the sheet at any given point, picks up the moisture content and automatically records it at the control center. A feature of the capacitor is that it can be set to ride the sheet at any given point; can be set to oscillate across the sheet; or can be traversed separately. This makes it possible to check the moisture at any desired point.

The equipment has proved so satisfactory in quality control that moisture testing equipment is being planned for the second coater, and also for the paper machines. With accurate control at all stages, great improvement in uniform quality is expected.

(Since this story was first written it has been learned that Newton Falls now has the Hygrotester equipment in service on one paper machine as well as the coater mentioned here, and that the other paper machine and coater are to be similarly equipped as soon as the equipment can be installed.)

Brightness Control: The gloss measurement equipment on the supercalenders has

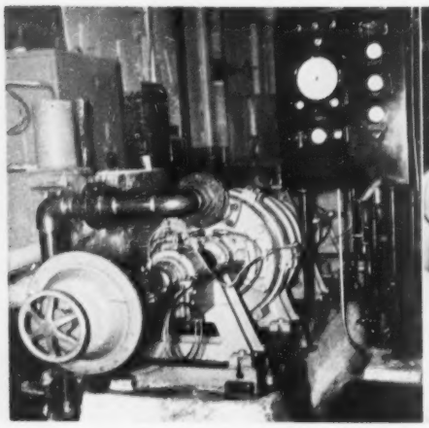
ONE OF FIRST MEASURES OF CONTROL effected by Newton Falls was development of gloss indicating equipment for supercalenders—a development carried on specifically for company by Glens Falls Laboratory, Inc. Photo-electric scanning unit (left), picks up gloss intensity of the sheet and records it on the instruments at right. Note there is a scanning unit for top and bottom sides of the paper so variations on either side may be checked and corrected.



paper is here for good!

BELOIT

PAPER MACHINERY



AUTOMATIC CONTROL AT EMERSON JORDANS (left) is Newton Falls control feature. High speed jordans are hooked up with Taylor instruments to provide automatic jordan plug pressure control. There are two of these setups, one for each Fourdrinier, with two jordans operating off each system.

BRIGHTNESS CONTROL IS EFFECTED by testing samples from each reel after coating and after supercalendering (middle). Laboratory technician is shown here testing sample in Hunter Multi-Purpose Reflectometer and checking brightness against control sample. This is equipment used by government in brightness testing.

NEW LABORATORY AND LATEST SCIENTIFIC EQUIPMENT (right) have been made available to Newton Falls researchers and technicians. Facilities such as shown here will help keep this New York mill "A Mill of Tomorrow."

already been mentioned. Final brightness measurement is made in the quality control laboratory through tests made of samples of paper from each reel after coating and after supercalendering. These tests are made on a new Hunter Multi-Purpose Reflectometer—equipment now standard in government testing. In this equipment the paper sample is tested for brightness against a control sample, so that exact quality can be determined.

Summary

No attempt has been made here to record all the controls in operation at Newton Falls for maintenance of production and quality, but only to point specifically to those that are new or have special industry interest. There are enough of these to show that Newton Falls management is progressively taking advantage of technological developments to make better paper faster—and cheaper.

NEWTON FALLS COMMUNITY PROGRAM

THE FACT that Newton Falls, N.Y., is strictly a mill town, and the nature of the housing program being sponsored by Newton Falls Paper Mill have been mentioned previously. But there is much more to the progressive community program than this.

To understand the problem and the eventual development of the program at Newton Falls it is necessary to understand the physical setup of what is known as the Clifton-Fine area. Clifton and Fine are two towns, with three villages in each town. Star Lake village, about six miles from Newton Falls, is the focal point of the area, with Newton Falls being one of the three villages in the town of Clifton.

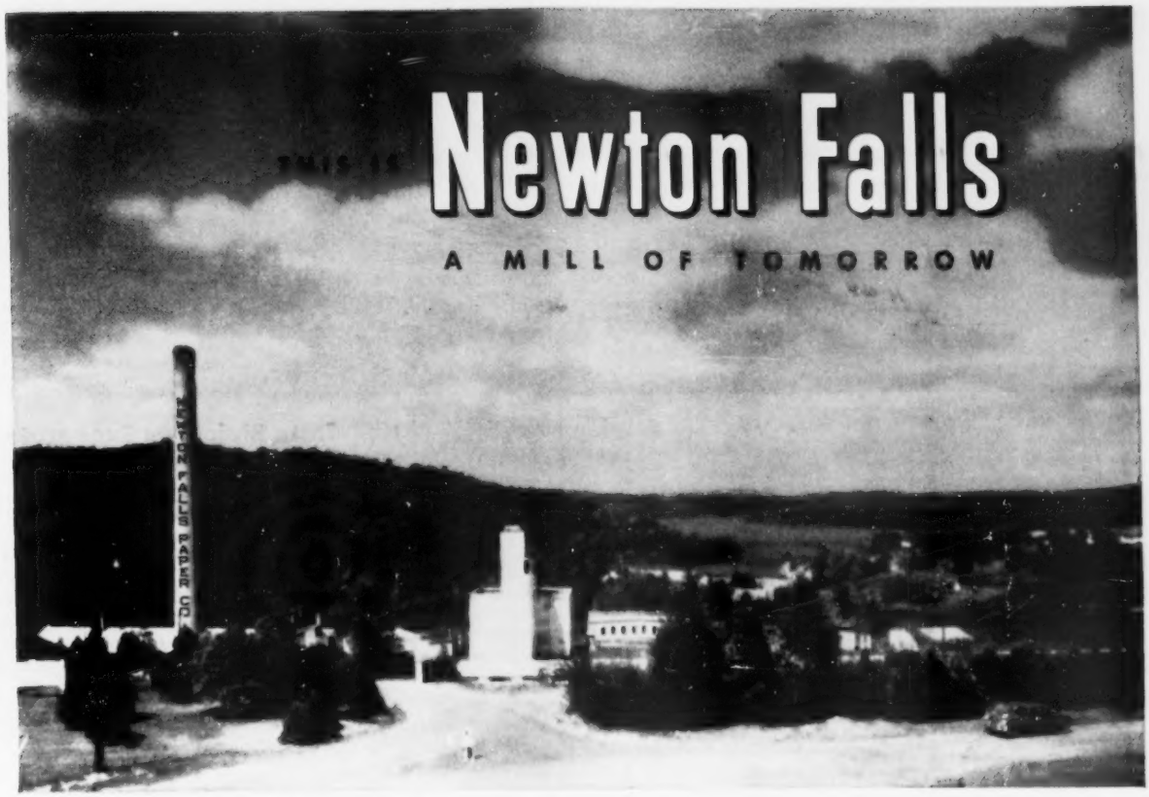
Newton Falls Paper Mill was the only industry in the area until the New York Ore Division of Jones & Laughlin Steel Corp. began operations at Star Lake in 1942. This new company and its employes placed new emphasis on the need for a school and a hospital, and from this need evolved a part of the important community program—a 29-bed hospital and a $1,400,000 centralized school.

Up until two years ago hospital facilities were 40 miles distant from the paper mill. Through the joint sponsorship of Newton Falls Paper Mill and Jones & Laughlin—who between them contributed approximately one-third of the funds necessary to provide the building and equipment—the 29-bed modern hospital with all operating facilities was erected in Star Lake.

The new school, housing all children of the towns of Clifton and Fine, furnishes instruction from kindergarten through high school. It replaces not only the schools in Newton Falls, but also schools in several surrounding communities. Children of mill employes are transported to the school from their homes by school-district owned busses. The financial burden of the Clifton-Fine school is borne by direct taxation on all property in the two towns. The boundaries of the school district were set up by a committee appointed by the governor of New York, which committee divided the entire state into centralized school districts.

The philosophy of the paper mill management centers around the feeling that

THIS ARTIST'S MAP shows how Newton Falls is located in heart of Adirondacks recreational country of upper New York. It is 335 miles from New York City, as stated on the map. It is 75 miles east of Watertown and Lake Ontario, 60 miles west of Saranac Lake, and 50 miles south of Thousand Islands resorts in the St. Lawrence.

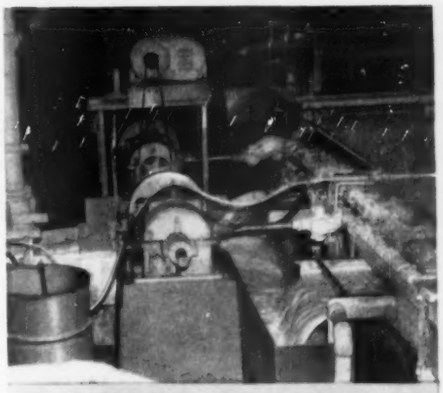


. . . using *Nalco* SPECIALIZED CHEMICAL SERVICES

Newton Falls Paper Mill, Incorporated, Newton Falls, New York, has earned the title of A Mill of Tomorrow through use of highly advanced equipment and very precise quality control at all stages of the papermaking process.

Nalco Specialized Chemical Services used at Newton Falls tie in closely with this quality control program. They include Nalco slime control and antifoam chemicals, fed accurately and automatically to the system; and Nalco 680 for better fibre and clay retention and improved pH control.

For prompt, expert assistance in applying these, and other Nalco System products and services to your mill operation, contact your Nalco Representative or write direct.



Foam bubbles eliminated on wire and in tray discharge by Nalco antifoam treatment at Newton Falls.

NATIONAL ALUMINATE CORPORATION
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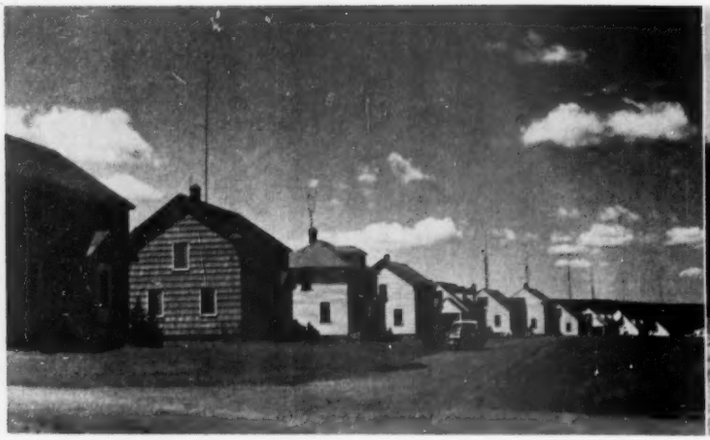

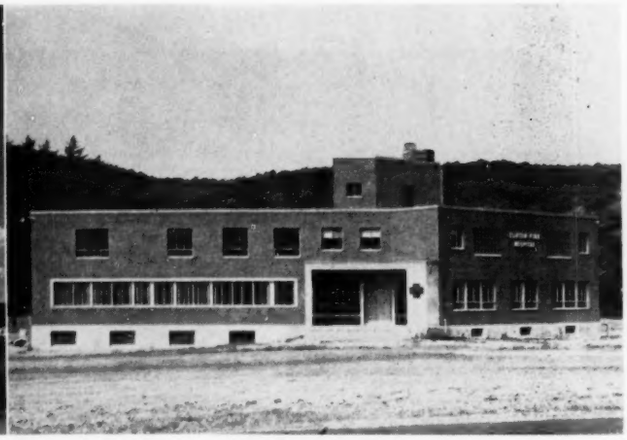

(LEFT) THESE ARE THE NEW HOMES in Newton Falls, part of a continuing program by the company to build from 7 to 10 new houses a year until each employe has a fully modern house. Twenty-eight houses have already been completed in this program.

(RIGHT) TO BRING HOSPITAL FACILITIES close at hand, Newton Falls Paper Mill contributed heavily to this 29-bed hospital at Star Lake, only 5 miles from Newton Falls. Until recent construction of this building, nearest hospital was 40 miles away.

an operation is successful if employes and their families are happy and contented in their environment. In sponsoring this philosophy, Mr. Hynes, Newton Falls' president, got under way a program at the termination of World War II which included not only housing modernization but building of new recreation facilities as well.

This has resulted in the building of a bowling alley and recreation center in Newton Falls that includes six alleys, a snack bar, and year-around recreation for mill employes. The mill management provided initial impetus for this center by supplying part of the necessary funds. A separate corporation was formed with employes as stockholders, and approximately 50 percent of these employes bought stock in the corporation. Any earnings are shared in proportion to the amount invested just as in a regular stock company.

The second recreational facility resulting was a beach center on the adjoining Oswegatchie river. This center is sponsored solely by the Newton Falls mill and provides a good sand beach, with an instructor and lifeguard in attendance six days a week during the summer months. It is the plan of the mill to increase the beach area in the near future, and to provide better bath house facilities.

As can be seen through this community program, Newton Falls Paper Mill applies progressive ideas to other things than just the operation of its plant.

Pipe Line Renewed At Port Townsend

The life blood of Port Townsend, Wash., and the kraft mill there is water and it runs through 28 miles of pipe. A coal-tar treated Douglas fir wooden stave pipeline originating on the big Quilcene River, after 20 miles, dumps water into City Lake; where it again enters pipe for eight miles. Although the city owns the pipeline and sells the water, Crown Zellerbach Corp. must operate and maintain the line. Crown replaced 4700 feet of wooden stave pipe in 1952 and this year is replacing 3600 feet with ¾ in. thick steel pipe, 24 in. diameter. Eventually, the pipes will be all steel from lake to town.

NEWTON FALLS MANAGEMENT was instrumental in securing a new centralized school (top) for the area at Star Lake, and in the construction of the Newton Falls Recreation Center (bottom) which houses six bowling alleys and a snack bar. Approximately 125 mill employes purchased stock in the incorporated Center.

State Biologists Exonerate Bastrop Mill on Pollution

Biologists of the Louisiana Conservation Commission, with sportsmen of the area in north Louisiana, conducted a test of Lafourche Bayou waters near the International Paper Co. mill at Bastrop, La., and seined up "plenty of fish, all alive and kicking," to quote H. E. Bigland, assistant state biologist. Other sportsmen had contended the waters were polluted by the mill but Mr. Bigland said tannic acid or rotting vegetation could have killed fish nearby.

They tested at a point where mill waters are turned into the bayou through gates. With a 30 ft. seine they hauled in bass, perch and other fish, large and small, all healthy.

Claude Houston, I.P. manager at Bastrop, Col. E. Y. Argo, I.P.'s Shreveport office manager; Harry Rogers, mill manager at Bastrop; and John Oswald and Fred Floyd, International technical directors, and several state rangers and others witnessed the tests.

Spokane Mill Loses Both Joe Butler, Myron Black

A severe blow to Inland Empire Paper Co., and to their many friends, were the deaths, within 11 days of each other, of Joseph H. Butler, Jr., and Myron W. Black, both top executives and right hand men to C. A. Buckland, vice president and general manager of the Spokane, Wash., mill.

Mr. Black, mill manager and technical director and widely known because of his travels to other mills and meetings, died July 25. Mr. Butler, assistant general manager and coordinator of production and sales, died Aug. 5.

Born and raised in Indiana and a University of Washington graduate, Mr. Black's first job was in college days in 1914 at Inland Empire. After graduation, he worked a year at Crown Z in Camas, Wash., and then returned to Inland Empire to stay, in early years as technical director and later with added duties of mill manager for many years.

Mr. Butler came from Erie, Pa., where his father was with Hammermill, and later Joe Jr. joined his father in working at the Spokane mill.

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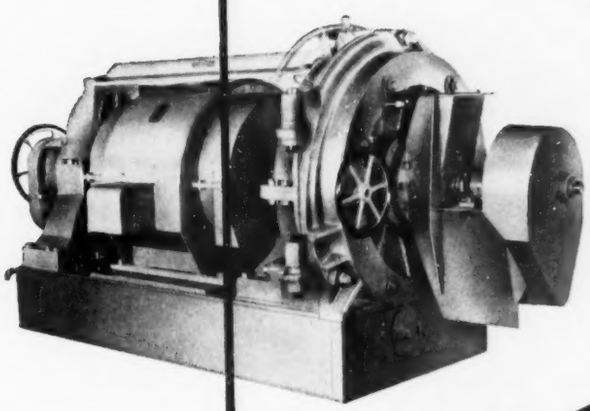

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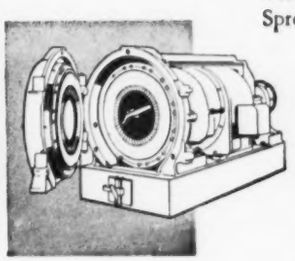


SPROUT-WALDRON
PULP REFINERS

273

COMMENTS AND CRITICISM ON ARTICLES

McDonald's "Washington Plan" Is Praised Highly

PULP & PAPER's lead articles in the August issue—"A Washington Plan," by R. A. McDonald, former NPA director and pulp and paper industry executive, and "Leaders Suggest Industry Set-up In Washington"—drew favorable comment from Walter Williams, under secretary of commerce, and others.

"I am most interested in the ideas presented in these articles," wrote Mr. Williams. "They are worthy of considerable attention."

From H. B. McCoy, acting administrator of NPA, came this comment: "We hope that you will be able to follow these fine articles in PULP & PAPER with suggestions and recommendations from other prominent executives of the industry. At this point we very definitely are looking to industry for fresh thoughts and ideas.

"Sincerely yours,
H. B. McCoy (signed)
Acting Administrator."

From W. LeRoy Neubrech, paper industry executive in the Department of Commerce, came this comment:

"The opinions and recommendations by some of the industry leaders regarding a new Forest Products Division in the Department of Commerce were indeed constructive and interesting. These should engender a closer relationship and understanding between industry leaders and the government, particularly the Department of Commerce, and thereby lead to more constructive accomplishments in the future.

"Sincerely yours,
W. LeRoy Neubrech (signed)
Deputy Assistant Director
Pulp, Paper and Paperboard
Forest Products Division."

An industrial executive who formerly held high position in wartime pulp and paper activities of the War Production Board, but who preferred not to be named, made these further comments:

"Under Section I of Mr. McDonald's article, and listed as A, B, C and D, he has clearly, in my opinion, enumerated the actual values that would accrue from any government-industry cooperation. This much should be in universal agreement in the industry.

"The most important question is the manner of combining industry representation with the government to obtain the best and most practical results. Here, there seems to be a wide divergence of opinion. The view that industry would prefer to see an industry man in charge, is refuted in his article, and one of the reasons is that with a change of administration an industry man might be forced out. It would appear to me that this would be more likely for a career man.

"There is no precedent for a peacetime association of industry with government on the basis that is now being discussed, but our experience under emergency conditions has indicated that with industry in control, and *only* with industry in control, can the required results be accomplished at the industry level. Because of the wide divergence of opinion on this point, a compromise might be effected if government would so allow to permit an industry man to serve with a career man, but classified at the same level, with the understanding that the industry man would be in constant touch with all decisions that had to be made and, in case of a tie, or disagreement, the matter be referred to the industry advisory committee.

"In the last analysis, the man selected to do the industry job is more important than the matter of leadership. My experience has shown that only those with a hard rock practical experience, in a very general way, would be useful. The industry representative would be in his position more as an observer than anything else and would not be expected to write regulations or orders, which is more or less the province of the bureaucrat. Instead, he would act as advisor only. Such a man would have to be the executive type, with no inhibitions, and have a broad understanding of the industry, plus an adaptable personality and industry prestige.

"If properly executed, such an arrangement, in my opinion, would be most valuable, and in the event of another emergency, would be a long step forward in the quick organization of a working divisional setup to eliminate the 'birth-pains' that we have had now on two different occasions."

THEY HEAD UP CROWN ZELLERBACH CORP. PURCHASING

NEW C-Z Top Purchasers: JOHN M. FULTON (left), new Director of Purchases, headquarters in Pub. Service Bldg., Portland, Ore. Headed Pacific Coast Supply many years, served as Navy officer in World War II. He succeeds D. J. Galen, retired. FRANCIS T. BOWLES (midd'e), h'q'ters San Francisco, Asst. Director of Purchases—responsible chiefly for supplies and raw materials. A 28 yr. C-Z man. STANLEY E. RINGHEIM (right), h'q'ters Seattle, Asst. Director of Purchases—responsible primarily in field of equipment.

Approval of West Va., Expect Hinde & Dauch Merger

A November meeting of stockholders of West Virginia Pulp and Paper Co. is expected to bring approval of the combination of the company with Hinde & Dauch Co.—a move recommended by directors of both. Merger calls for trading of one and one-third shares of new West Virginia common stock, after a four-for-one split, for each share of Hinde & Dauch. The new issue would authorize shares to 7,500,000 at a par value of $5.00.

Although the merger achieves complete integration of some production at one stroke, plans call for no change whatever in the separate operations for the present, PULP & PAPER was told. Hinde & Dauch is to be operated as a subsidiary of West Virginia, and will continue without change in personnel, customer relationships, or material supply.

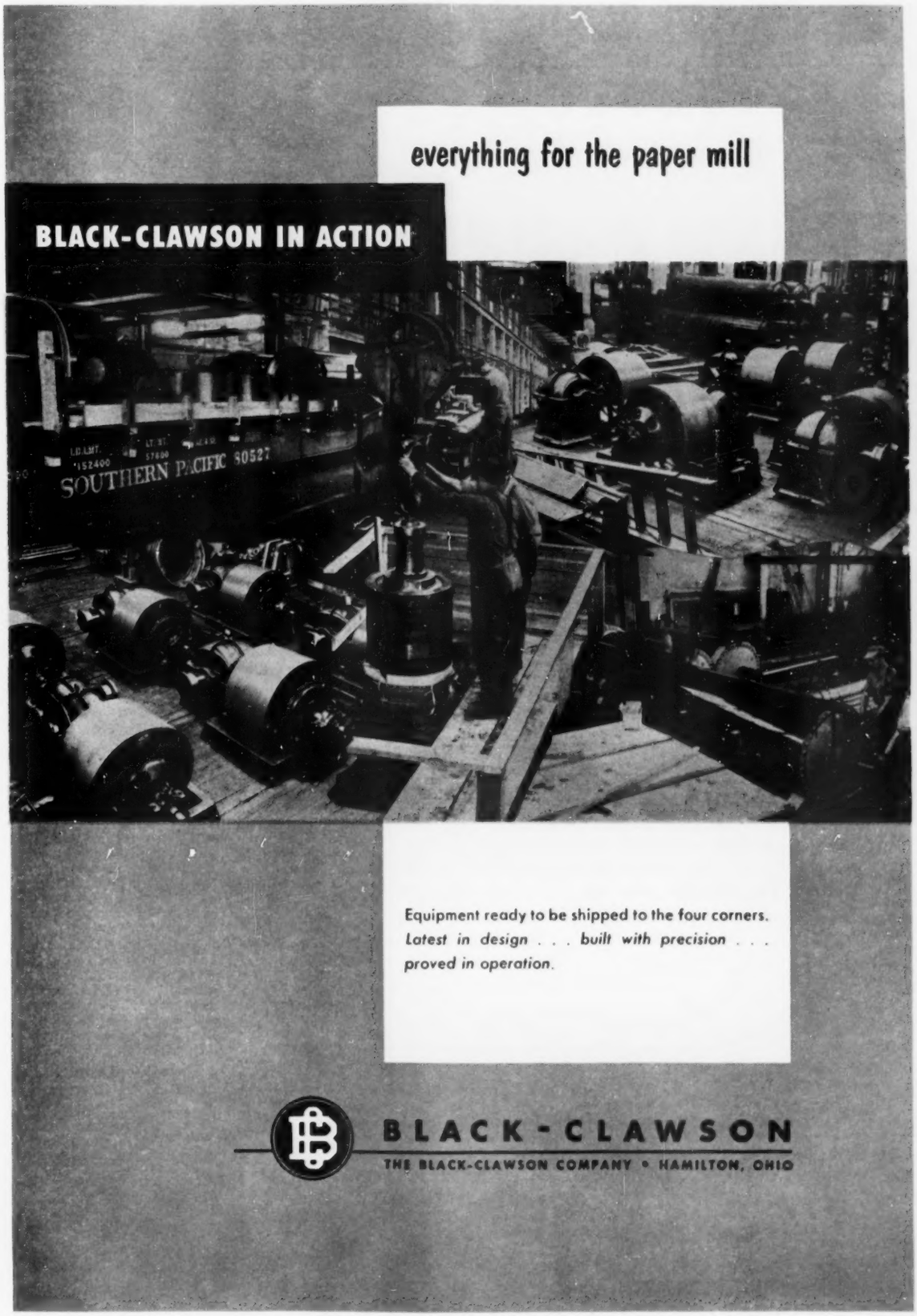
Although one of the largest manufacturers of paper and paperboard, West Virginia has never converted its output into end products. Hinde & Dauch, on the other hand, has been a leading converter, but without facilities for manufacture of its entire requirements of paperboard. The merger brings together West Virginia, with a paper and paperboard capacity of approximately 800,000 tons per year, and Hinde & Dauch, whose 12 box factories produce about 3 billion sq. ft. of board products and whose 3 paperboard mills produce over 80,000 tons of paperboard per year.

West Virginia has long been one of the progressive factors in the paper industry. It has raised its research and development expenditures to over $1,000,000 annually, and from its laboratories have come many developments for more complete utilization of available woods, and by-products. At the same time the company has carried on a program of modernization and expansion that has called for gross investment of $92,000,000 for its six mills since 1945.

West Virginia now produces approximately 220,000 tons of white printing and fine papers; 280,000 tons of kraft liner board, corrugating and kraft fiberboard; 110,000 tons of white converting papers and boards; and 100,000 tons of kraft papers. Long a factor in printing and fine papers, West Virginia's most spectacular production changes have come in kraft liner and corrugating boards, growing from less than 50,000 annual tons in 1937 to 280,000.

How Nekoosa-Edwards Meets with Shareholders

A country-style picnic lunch in a rustic setting near Port Edwards, Wis., was the background for a shareholders' meeting of Nekoosa-Edwards Paper Co. There were 240 shareholders from all walks of life who turned out, hearing firsthand reports from management. At the Nekoosa mill, they were shown the new 180 in. Pusey-jones Fourdrinier machine, the company's No. 9, and 5th at Nekoosa (story in June issue).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SOUTHERN PACIFIC 80527
Equipment ready to be shipped to the four corners.
Latest in design . . . built with precision . . .
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For use with the Model T-35 BANTAM... the latest development in shovel-cranes.

LIFTS 12,000 LBS.!

LOW PRICED ONLY

$12,750

Complete, as Illustrated F.O.B. Factory

Lower price if Crane Carrier Extras such as double out-riggers and fenders not desired. (Price subject to change)

This brand new Crane Carrier, exclusively engineered for BANTAM mounting by a leading and famous truck manufacturer, answers the demand for all-new truck crane equipment with high-speed mobility. It's built right — and priced right!

This, too, is ALL NEW!

The Great C-35

CRAWLER

5-ton . . . ⅜ cu. yd.

Yours for only

$10,330

Complete Crawler Back Hoe with 30" bucket, f.o.b. Factory. (Price Subject to Change)

Now . . . BANTAM Offers Any Type of Mounting You Want

The versatile, job-proved BANTAM which has established enviable records of economy on all kinds of lifting and excavating jobs everywhere is now available with a wide choice of mountings, letting you select the best suited combination to handle your jobs faster and at far less cost.

Today, you can get a BANTAM with a brand new, all-new Crane Carrier as illustrated . . . or mounted on a factory guaranteed re-built truck. Or, to save yourself more money, a BANTAM can be field-mounted on YOUR TRUCK.

But, that's not all! Then, to meet your needs for a top quality, low-priced ⅜-yard crawler shovel-crane, Schield BANTAM now offers the new Model C-35 . . . it's the revolutionary crawler everyone's talking about! And, best of all — no matter which type of mounting your work calls for, the complete BANTAM with any one of 9 fast-change front-end attachments is still the lowest priced, ⅜-yard, 6-ton shovel-crane on the market.

Investigate the BANTAM method . . . find out how a BANTAM lets you bid lower and get more work. Ask for a free demonstration on your job. See your nearest Schield BANTAM Distributor or contact the factory, TODAY!

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275 Park St., Waverly, Iowa

T-35 with Crane Carrier for fast job-to-job moves

T-35 BANTAM mounts on factory re-built 6 x 6 or on Your Truck.

ANOTHER NEW PRODUCT OF THE

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WORLD'S LARGEST PRODUCERS OF TRUCK CRANES AND EXCAVATORS

9-POINT FORESTS PROGRAM—

INDUSTRY UNITING ON NEW STATEMENT OF POLICY

Preliminary word on progress in drafting a "Statement of Policy" by the Forest Industries Council indicates a strong 9-point statement will be forthcoming which it is hoped will unite the forest products industries in a program to improve America's woodlands and provide continuing source of raw material supply for present needs and future expansion.

Work on the statement for FIC is being completed by the organization's Forest Policy Committee, and the final draft will be printed in a 24-page booklet entitled: "Growing Trees in a Free Country." The policy statement was first expressed in general terms in 1945 by representatives of the American Paper and Pulp Association, American Pulpwood Association and National Lumber Manufacturers Association. These associations, the fundamental structure of FIC, are said to represent four-fifths of the wood harvested from American forests.

The 9-point program of FIC, in preliminary form, calls for agreement to:

1. Promote extension to all forestlands of adequate and economic protection against fire.
2. Cooperate with agencies to reduce losses by insects and disease.
3. Urge continuance and expansion of forest practices that will yield perpetual crops of forest products, protect soil and watershed values, and insure full use of resources.
4. Encourage private ownership and management of forestlands for continuous and profitable production of tree crops, in preference to public ownership and management of such lands.
5. Support measures that will provide for management of public forestlands on same high level of management practiced on better managed private lands.
6. Advocate equitable federal, state, and local taxation of timber and forestlands.
7. Support adequately staffed and competent state forestry organizations.
8. Encourage maximum utilization of the forest product.
9. Promote industrial research and cooperate in effective public research, where appropriate, to achieve greater utilization and better commercial forest management.

A strong statement is expected to be forthcoming on the matter of private ownership and management. The Policy Committee has indicated, and it is expected that the membership of the three organizations will agree, "that it is sound national policy to see that the greatest possible share of forest land should be on the tax rolls that support local government. Only those lands which private ownership cannot keep productive, or on which critical public interests cannot be protected otherwise should be taken into public ownership, primarily by the States and secondarily by the Federal government."

Citizens interested in forest welfare will be asked to reduce their reliance on federal funds; to reduce centralized control over state and private policies; and to encourage cooperative joint action rather than regulatory approaches to the problems.

In the preliminary summary of the basic principles to be espoused by FIC, programs of action were suggested that:

1. Private forest owners and operators should take the initiative in meeting their forestry problems and should refrain from seeking public funds for their solution.
2. There should be greater reliance on state funds to meet forestry problems of a public nature.
3. Any increase in total federal forestry appropriations should be discouraged, except for specific projects which have a well defined and urgent need or which have self-liquidating features.

FIRST "TREES FOR TOMORROW" CERTIFICATE AND SIGN

At a meeting of directors of Trees for Tomorrow Inc., at their Eagle River, Wis., camp, a plan of recognizing outstanding forestry work by private landowners was launched. Above, FOLKE BECKER, President, Trees for Tomorrow Inc., and President of Rhinelander Paper Co., presents first certificate and roadside insignia to Mrs. Roderick McKinnon Jr. The McKinnons, operators of a 770-acre farm in Vilas County, have been complying with management recommendations drawn up by Trees for Tomorrow since 1946. In past 8 years they planted 25,000 trees, harvested 900 cords of pulpwood, 40,000 bd. ft. of timber, 100 Christmas trees, 325 gals. of maple syrup. In the picture, left to right: Mr. Becker; R. H. PETRY, Forester, Nekoosa Edwards Paper Co.; TOM LEECH, Vice President, Whiting Plover Paper Co.; E. B. HURST, Woodlands Mgr., Consolidated Water Power and Paper Co.; RODERICK McKINNON JR.; STANTON MEAD, President, Consolidated Water Power and Paper; and M. N. TAYLOR, Executive Director, Trees for Tomorrow.

AN APA MEETING IN MAINE

Pulpwood section
PRODUCTION • MANAGEMENT

MORE THAN 100 INDUSTRY representatives attended a two-day summer meeting of the Northeastern Technical Committee of the American Pulpwood Assn. at Old Town, Me.

E. C. Melcher, S. D. Warren Co., was chairman with Louis Freedman and Buck Merrill, Penobscot Chemical Fibre Co., and Floyd Crocker, St. Regis Paper Co., handling some of the arrangements. It was announced the next meeting would be held at the Ravine House, Randolph, N.H., Oct. 7-8.

Field demonstrations featured Schield Bantam crane with a ¼ cord grapple equipped with a special grapple positioning device manufactured by Morin Mfg. Co.; the Pettibone Milliken Cary-Lift pulpwood loader with rotation clamshell attachment loading 4-foot pulpwood in open-top rail cars; the "C" Tournadozer for road building operations; and the Four Wheel Drive Co. Blue Ox log skidder.

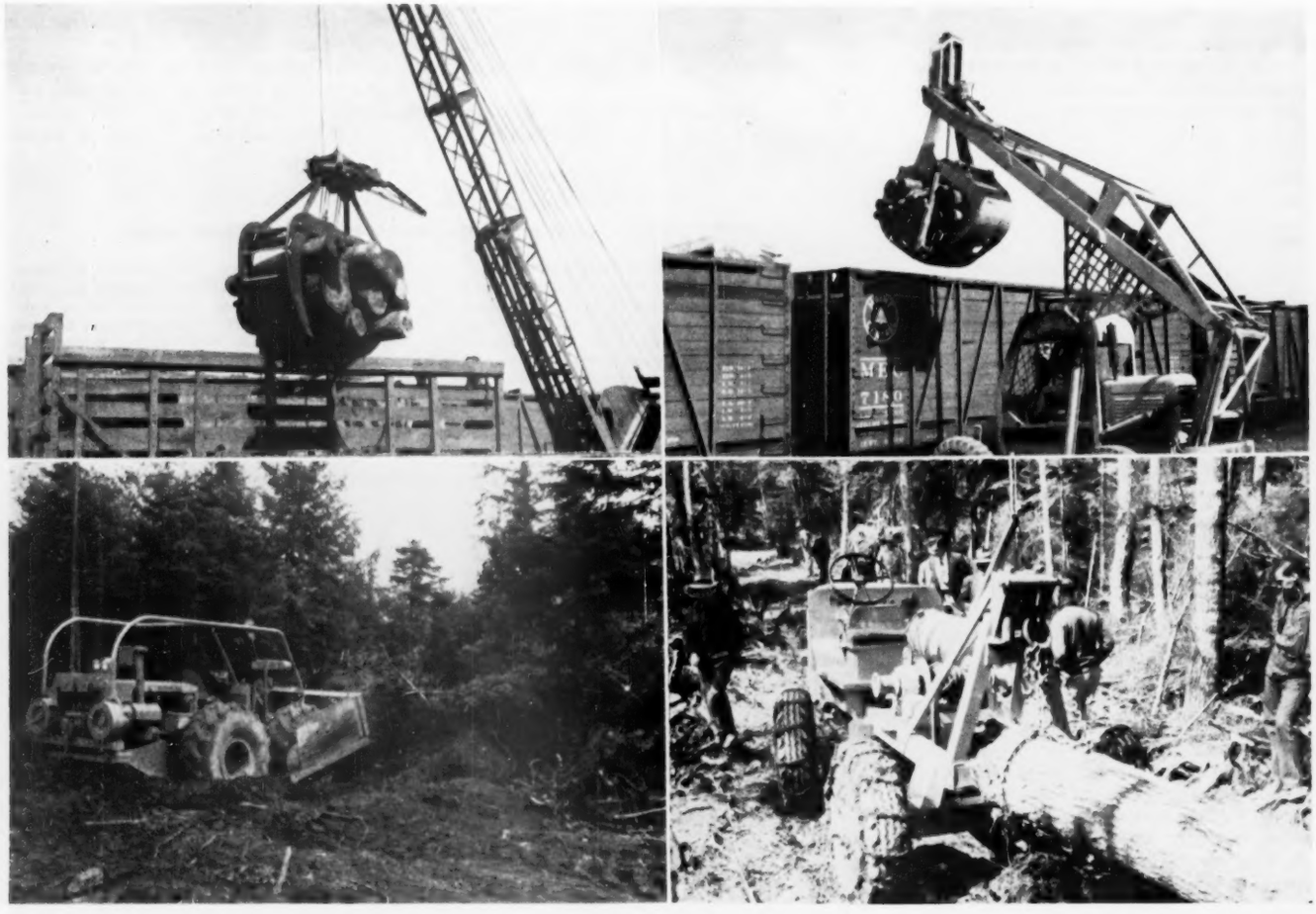
George Ostertag, field engineer for the Four Wheel Drive Co., Clintonville, Wis., was on hand and gave the following description of the skidding unit manufactured by his company, and of which a test unit is in operation by Diamond Match Co. near Machias, Me.

This machine was developed principally to handle and skid long length pulpwood and sawlogs in the woods. It is essentially a four-wheeled drive, rubber-tired tractor.

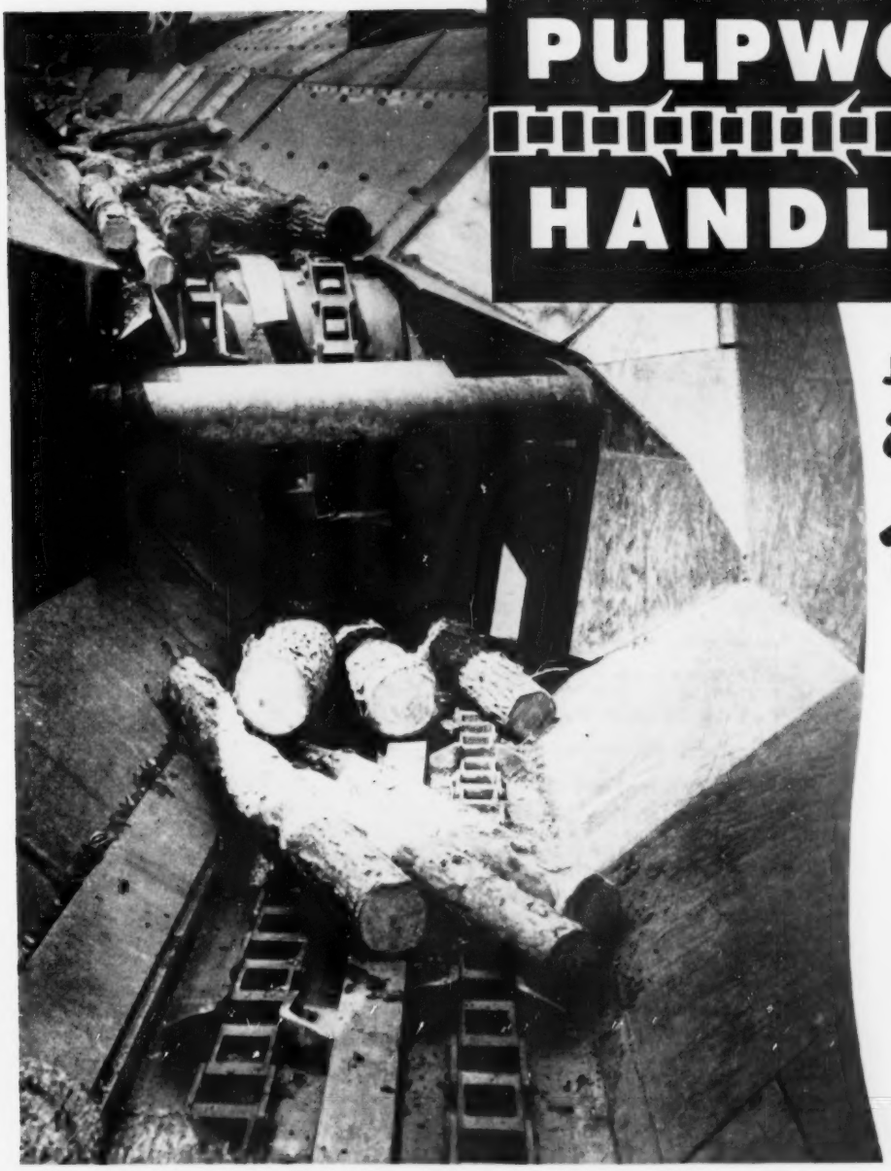
For several years, the F. W. D. Co. has closely watched those machines, the forerunners of the present production model, as they operated in Maine. These original skidding units, converted from old F.W.D. trucks by local loggers, were modified primarily to skid logs in much the same manner as is normally done with a crawler tractor and sulky, with the exception that the sulky has been eliminated in favor of mounting the A frame on the rear of the skidding unit. This A frame is utilized along with a 15,000 lb. winch and $^{9}/_{16}$ in. cable. The cable extends through the rollers of the A frame and down, fastening to the chokers binding the logs. By winch power one end of these logs, or long length pulpwood stems, can then be easily raised for skidding from the woods.

The advantages of the Blue Ox were said to be: *First*, they should be cheaper to operate than a crawler tractor from a maintenance standpoint. *Secondly*, they can be designed to operate at relatively high speeds which can mean more cords of pulpwood, or more sawlogs, hauled over a given period of time. This should show up in a reduced cost per unit of woods product handled, it was said.

The specifications of the standard Blue Ox: This machine has a top speed of 35 miles per hour, yet has a maximum gear reduction of 82:1. The major gear reduction is varied by a 5 speed transmission. The starting draw-bar pull, with no load or ballast, is approximately 8,000 lbs. The starting draw-bar pull increases proportionately to the amount of load picked up



FIELD TRIPS DURING NORTHEASTERN Technical Committee Meeting of APA brought out demonstrations of equipment shown here. Upper left—SCHIELD BANTAM CRANE mounted on half-tracks and equipped with a ¼ cord grapple with a special grapple position device, operates in the yards of St. Regis Paper Co. at Howland, Me. Upper right—CARY-LIFT with a special rotating clamshell works out on 4-foot pulpwood at the St. Regis yards loading open-top rail cars. Lower left —MODEL "C" TOURNADOZER gives a road-building demonstration in the woods operations of Penobscot Chemical Fibre Co. at Edinburg, Me. Lower right—Log skidder of FOUR WHEEL DRIVE CO. demonstrates tree length skidding. Diamond Match Co. is testing this Blue Ox unit near Machias, Me.



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- Belt Conveyors
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- Barge Unloaders
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Jeffrey Chain Conveyors are built to take severe punishment—the constant impact of falling pulpwood like you see here. Jeffrey PW 132 chain with S-212 Spurs, designed especially for this type of work, is shown above. Let us tell you about it.

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PLANTS IN CANADA, ENGLAND, SOUTH AFRICA

IF IT'S MINED, PROCESSED OR MOVED
. . .IT'S A JOB FOR JEFFREY!

with the A frame to a maximum of about 16,000 lbs.

The wheel base of the Blue Ox is 90 in. and steers only on the front axle, resulting in a turning radius of 16½ ft. As optional equipment, the company furnishes both front and rear steering with both axles steering independently. The front axle in this case steers manually by means of a heavy-duty type steering gear. The rear steering axle, when furnished, is power-steered and controlled by a 10 in. lever mounted to the instrument panel. It is operated by the driver with his left hand by moving the lever either forward or aft. If desired, and again as optional equipment, power steering can be incorporated on both the front and rear axle. Both axles are then steered by levers which operate the same as the steering method incorporated on a crawler tractor. With four-wheel steering the Blue Ox can be completely turned around in its own length.

The standard tire size is single 11:00 x 20—12 ply all-traction logging-type tire, but optional sizes are available up to a maximum of 14:00 singles.

If the operation is bad enough, from the flotation standpoint, in extreme bog or swamp areas, dual tires can be mounted, both on the front and the rear. Because this machine will necessarily have to operate in swamp areas at times, the company designed a special brake which mounts high up in the frame and which operates on the drive line, supplying braking action to all four wheels. The brake is actuated either by a foot pedal or a parking brake lever.

As for the engine, said Mr. Ostertag, the company has worked out only the design incorporating a gasoline engine. If sufficient interest is shown in the future for diesel power, it will then offer a diesel engine as an option. The present gasoline engine has a 237 cu. in. displacement and develops 97 hp. at 3200 rpm, and 190 ft. lbs. of torque at 1600 rpm. The engine is equipped as standard with a deep sump oil pan, so the oil pressure can be maintained at any angle or operation. The air cleaner is of the oil bath type, and the fuel tank has a capacity of 34 gals.

The A frame, rear winch and front winch, which was shown mounted on this tractor, represents optional equipment. The heavy duty steel brush guard, however, is standard equipment.

St. Regis Aids New York Planting

A program sponsored by St. Regis Paper Co., to encourage reforesting of idle lands in northern New York, is in its second year of plantings scheduled for this fall. St. Regis provides the use of a company tree planter and operator, at a nominal charge of $3 per acre, while the seedlings are supplied free from the State tree nursery at Lowville. The land owner is expected to furnish the second man needed in the planting operation.

In less than a year in two selected areas in Lewis and St. Lawrence counties approximately 300 acres, owned by 39 farm cooperators, were planted with seedlings last spring.

INDUSTRY AND STATES FIGHT FIRES

Their Efforts Reduce Need of Federal Activity

The great strides made in prevention and control of forest fires in recent years have been due largely to enlightened public opinion and intensified efforts by public agencies and by industry through its Tree Farm and Keep Green programs.

The figures below show that this has been done with a relatively small increase in the appropriation of federal funds, particularly in the last five years:

Federal vs. State and Private Contributions to Fire Protection*

Year	*Federal*	*State & Private*
1948	$8,604,955	$14,895,059**
1952	8,960,230	26,636,875

Increase in average annual expenditures by state and private agencies:

1930-1939 incl.	$ 4,579,644
1943-1952 incl.	13,249,210***

* From Clarke-McNary Reports of U. S. Forest Service.

** Does not include several millions spent outside program by private owners.

*** Includes an average of $240,027 in state and private war emergency funds.

It is apparent that the states and private agencies are rapidly assuming the responsibility for protecting their lands from fire and that increased federal subsidies are not warranted except to temporarily induce or stimulate organized protection where it has not been established or where it is inadequate.

An original purpose of the Clarke-McNary Act was to encourage the states to provide and maintain adequate fire protection. The act has served its purpose well but the formula used to distribute funds among the states needs to be reviewed, in the opinion of some pulp and paper industry leaders.

A more equitable method of allotting these funds to obtain the greatest amount of protection per allotment dollar should be developed, they say.

Before many more years, the reliance on federal funds should be reduced, if this is carried out.

Pulpwood section
PRODUCTION • MANAGEMENT

Progress in Forest Research in the South

Progress in forest genetic research under direction of the Committee on Southern Forest Tree Improvement, established by an original conference in Jan., 1951, is reflected in Station Paper No. 20, Southeastern Forest Experiment Station, Asheville, N.C., of which E. L. Demmon is director.

This seventh report of studies for development of superior commercially usable trees is titled "Suggested Projects in the Genetic Improvement of Southern Forest Trees." The committee and subcommittees are composed of industrial, state, federal, and educational forestry group representatives. Subcommittee titles include: geographic sources of seed, genetic control of seed, selection and breeding, progeny testing.

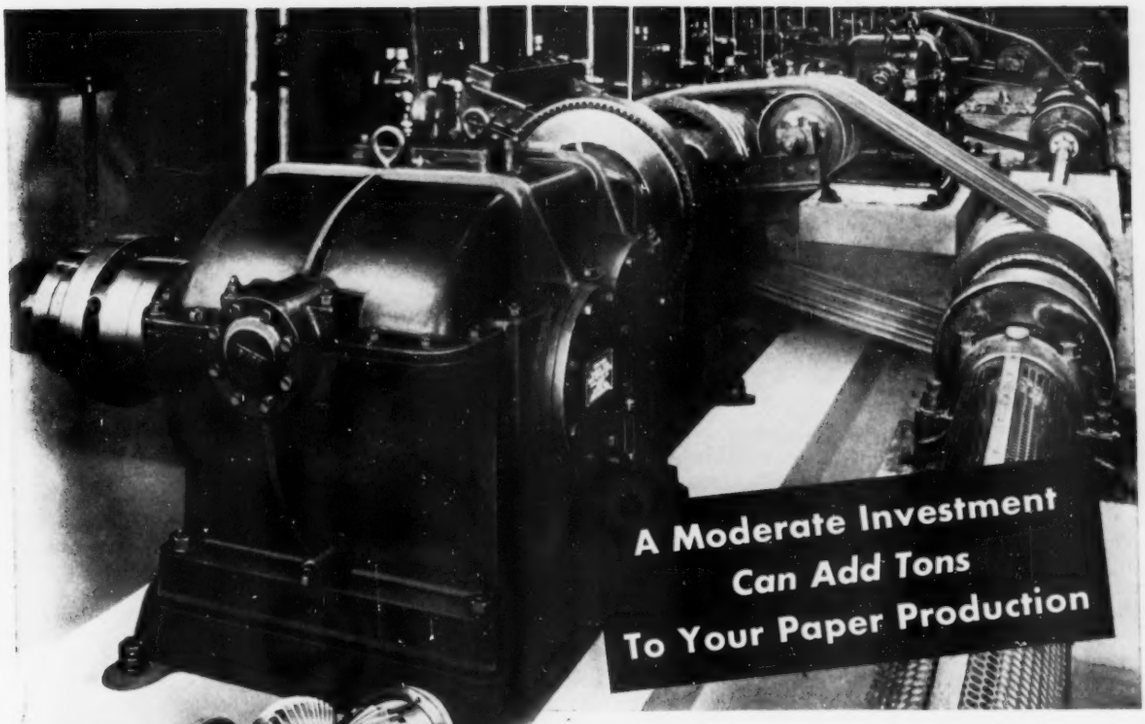
I. P.'s Cutter Used With Harvester Crawler

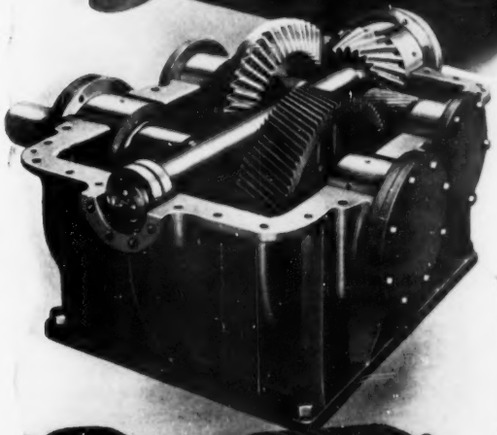
A mechanized, non-commercial thinning program to clear dense pine reproduction areas and prevent young scrubs from becoming stagnated, is under operation near Georgetown, S.C.

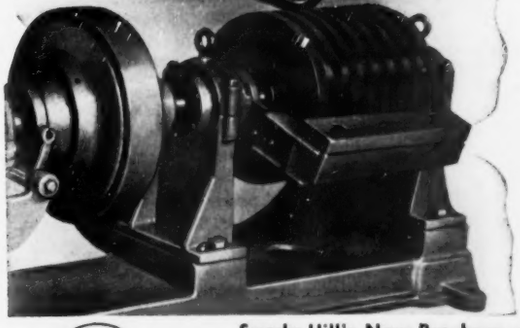
The Timberlands Division of the International Paper Co. is using a five-foot long drum, towed by an International Harvester TD-9 crawler tractor, to cut out strips in areas where young pine are now 6 to 12 ft. high. The cutter, which has five-foot blades spaces 14 in. apart, moves behind the crawler tractor at the rate of one acre per hour, leaving thinned pine rows which run at right angles to the highway so that public may appreciate results of the operation.

The company, which has six cutters designed by one of their own men, plans to thin some 3,500 acres this year.

PRUNING A PINE FOREST to prevent young dense growth from becoming stagnated, an International Harvester TD-9 hauls five-foot drum cutter over dense pine reproduction area for International Paper Corp.'s Timberlands Division in Georgetown, S.C. The cutter, which carves out 5-ft. strip, the same width as crawler tractor, covers an acre per hour.







The Sandy Hill Selective Drive

All Sandy Hill Selective Drives were installed and started up and are still running without structural or functional failure.

This reflects the attitude of the company's designers in designing adequately for paper machine operating strains. It reflects the Sandy Hill designers' knowledge of paper mill operating conditions which the drives must meet in order to function without failure or annoyance to the user.

Sandy Hill does not build a cheap drive because it believes that a drive which will last over a long period of years with no more attention than adequate inspection and lubrication is the most economical per ton of paper made.

Features

Unvarying draw between sections.

Fineness of draw regulation.

Simplicity of design that keeps maintenance within the ability of the good paper mill millwright.

Power saving and low first cost to a degree hitherto unknown.

No detectable slippage due to the V-belt feature of the drive.

Saving in space, no basement or mezzanine needed for line shaft.

Write on your company letterhead for further information about an adequately designed drive.

Sandy Hill's New Brochure of Pulp and Paper Making Machinery is available on request.

The Sandy Hill Iron & Brass Works

Hudson Falls, N.Y.

Machinists and Founders Specializing in Pulp and Paper Mill Machinery

Manufacturers of
Adjustable Cylinder Vats
Cylinder Paper Machines
Kamyr Pulp Grinders
Dandy Roll Drives

Quick Opening Gate Valves
Bertrams Flow Distributors
Bertrams Shakes
Kamyr Stock & Pulp Pumps
Kamyr Vacuum Washers

Neilson Slice
Kamyr Felтless Wet Machines
Selective and Corner Drives
Fourdrinier Paper Machines
Packer Screens

Castings
Kamyr Pulp Bleaching Equipment
Scafield Felt Conditioners
Yankee Fourdrinier Machines
Yankee Cylinder Machines

Associated with Canadian Vickers, Ltd., Montreal, Builders of Sandy Hill Designed Machinery in Canada

NEW CALIFORNIA MILL

FLINTKOTE SAN LEANDRO PLANT IS MODERN

MODERN IN EVERY RESPECT is the new $3,000,000 plant of the Flintkote Co., San Leandro, Calif., formally opened last June to serve the company's expanding markets in the northern California area.

A 100-ton per day capacity six cylinder Downingtown paperboard machine with complete stock preparation equipment and an 80 in. 500 fpm S & S corrugator, along with the necessary printer-slotters, stitchers and tapers used in the manufacture of corrugated shipping containers, are units now operating.

Officials of the company decided on construction of the plant, on a 20-acre site, after extensive research and development, particularly in use of corrugated and solid fiber containers in the shipment of fresh produce such as oranges, apples, grapes, eggs, tomatoes, lettuce, pineapples, papayas, lemons and strawberries.

Flintkote officials found a rapidly growing market opening in the transport of berries. This commodity, like lettuce, needs a container resistant to rough handling and high moisture atmospheric conditions.

With the new San Leandro operation, Flintkote has four western U.S. manufacturing facilities, including the Canec Division insulation board plant, Hilo, Hawaii.

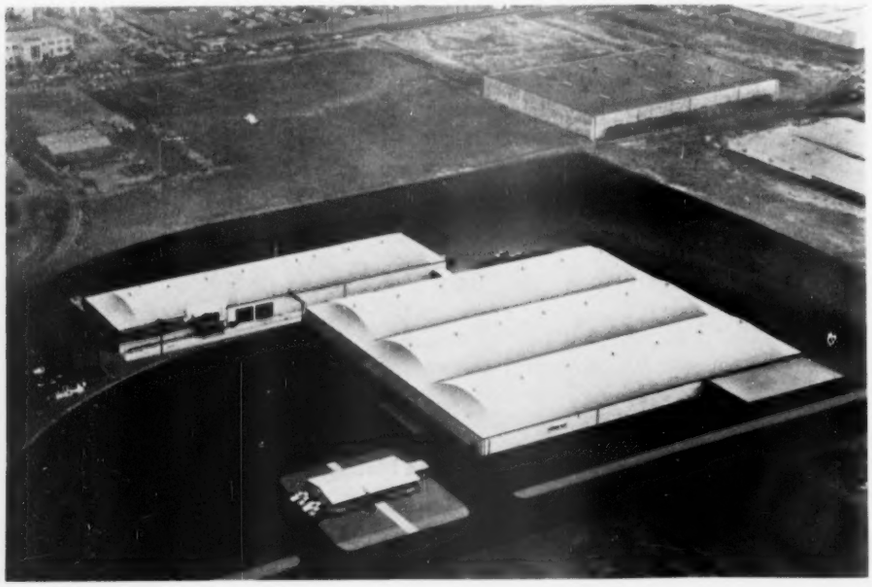
Personnel

George J. Pecaro, vice president and general manager of West Coast Flintkote operations, has charge of western activities, assisted by William C. Birdsey, manufacturing manager, and Philip F. Paul, division manager for Los Angeles and San Leandro plants.

William A. Kinney is resident plant manager at San Leandro. He started his career in the roofing division of Richardson Paper Co., Lockland, O., in 1922 became superintendent in a new Richardson plant in New Orleans. In 1927 Flintkote took over the roofing division of Richardson and Mr. Kinney has been with Flintkote since. In 1934 he was made production manager in Los Angeles, and in 1952 plant manager at San Leandro.

GEORGE J. PECARO, Vice Pres. and Gen. Mgr., West Coast operations of The Flintkote Co.

AIR VIEW OF THE FLINTKOTE CO.'S new Paperboard Mill at San Leandro in California. It has a 100 ton per day board machine, a corrugator, a printer-slotter and other equipment for making containers. Fiber containers are becoming in greater demand for California produce of all kinds. In left foreground—office. Left background—Combustion Engineering steam plant and Graver water treating plant. Center background—paperboard mill. Center —Container plant.



John W. Flannigan is superintendent of the paperboard mill at San Leandro. He was formerly with U.S. Gypsum in Kansas City, and came to Flintkote in Los Angeles as a machinetender, later being promoted to tour boss.

Don W. Kennedy, superintendent of the container plant at San Leandro, came with Flintkote in 1938 and has worked in various positions.

Clyde Kutchera is supervisor of maintenance at San Leandro. He came to Flintkote from the Vernon, Calif., power plant.

Resident engineer at San Leandro is Kenneth McLarty. He was with the American Asphalt Roofing Co., and U. S. Gypsum in Kansas City.

Wayne H. Kuefner is in charge of quality control. He is a graduate of Iowa State and came direct to Flintkote.

Lisle Hose is purchasing agent and traffic manager. He has had much experience in these fields.

Design and construction at San Leandro were under Ernst Tonjes, chief engineer, Pioneer Div., The Flintkote Co., and Phares Horst, field engineer.

General Construction

The paperboard machine building, 90 x 360 ft., is of steel and concrete block construction with a bow-string wood-trussed roof and no interior columns. Swinerton & Walberg, San Francisco, were general contractors.

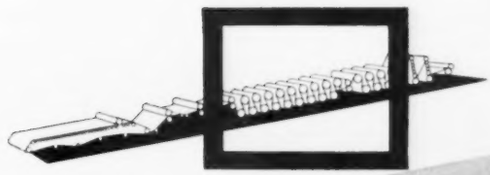
The paper machine occupies about half of the building, with plenty of additional space for purchased pulp, baled waste paper and other raw materials, moving up to the paper making process via fork lift trucks, as well as for finished sheets and roll stock moving to the container plant.

Water is pumped from two deep wells on the property at 1500 gpm, and discharge of all effluent is through the city's industrial sewer.

An outstanding start-up was made—within 25 minutes after start-up, salable paper was coming from the finishing end of the machine.

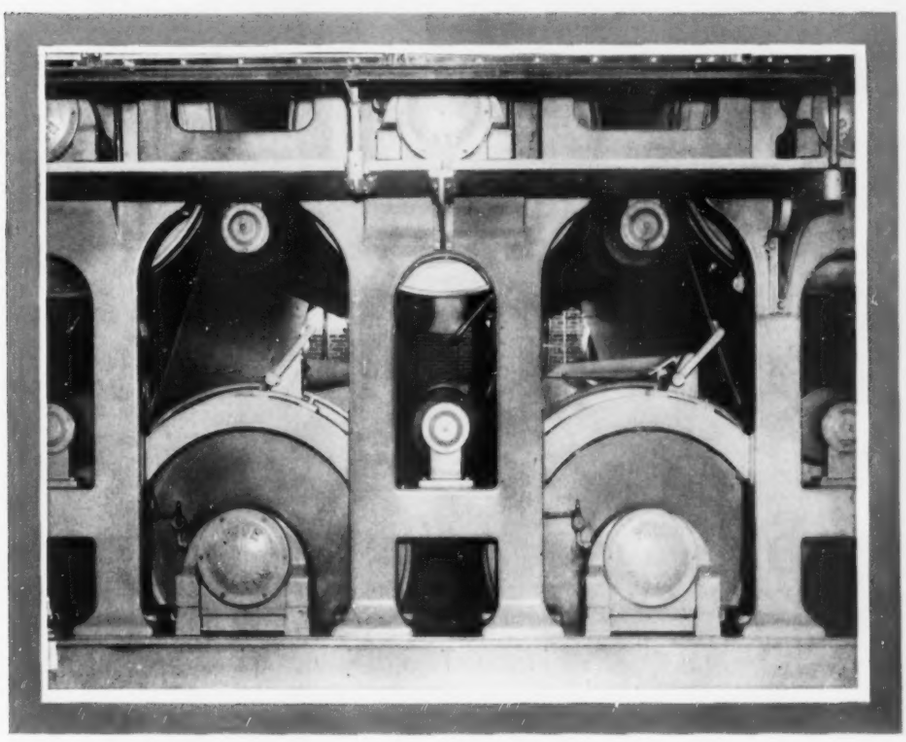
The new machine is designed to produce test liner, gypsum liner, corrugating medium and folding box board. Seventy-five tons per 24 hours is the designed rate and additional production may be obtained should supplementary equipment be installed.

Downingtown designed and equipped the stock preparation system, in conjunction with the Flintkote engineers. It is a three-stock system composed of top liner,



For Peak Dryer Efficiency . . .

-- a Rice Barton Dryer Section



Rice Barton's unique spacing of dryers, which provides more evaporation space within a given length in the dryer section, increases drying rates without affecting steam consumption.

— and of course . . .

Shop erected and aligned dryer sills, frames and bearings, which eliminate costly drilling in the field, balanced dryers, and hobbed and generated-tooth dryer gears are among the many standard features which make a Rice Barton dryer section superior.

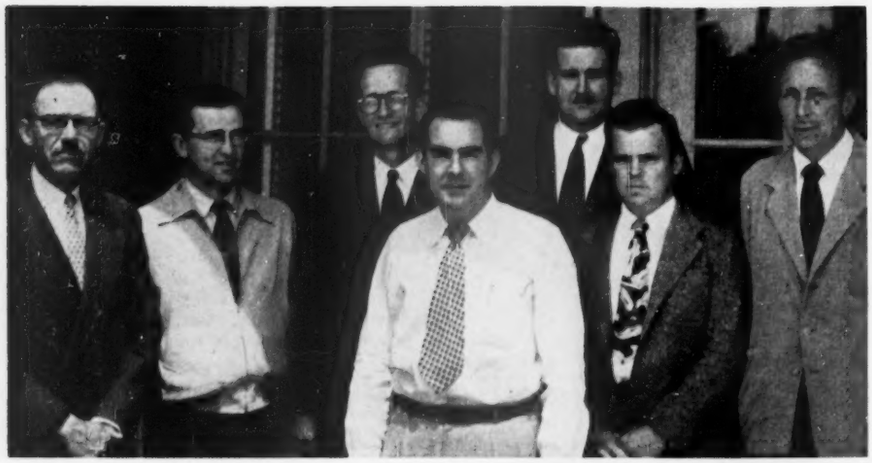
RB10-53

RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor Ray Smythe • • 501 Park Building • Portland, Oregon



KEY PERSONNEL OF SAN LEANDRO, CALIF., PLANT, the Flintkote Co. L to R—W. A. KINNEY, Resident Plant Manager; JOHN W. FLANNIGAN, Paperboard Mill Superintendent; DON W. KENNEDY, Container Plant Superintendent; WAYNE H. KUEFNER, in charge of Quality Control, San Leandro; LISLE HOSE, Purchasing Agent; KENNETH McLARTY, Resident Engineer; and CLYDE KUTCHERA, in charge of Maintenance.

filler and bottom liner stock supply for the vats. Furnish is fed to each of two Fibrepulpers, one continuous type for filler stock, and one batch type for top and bottom liner stocks.

The Continuous Fibrepulper

The continuous Fibrepulper is Type C, equipped with junk remover, rag catcher, regulating box, and extraction chamber. Its tub is of a patented four-lobed design. Stock from this Fibrepulper is pumped to a settling trough built by Flintkote for any heavy materials. From there the stock is thickened back to jordaning consistency by means of two 122 in. Shartle thickeners. The extraction chamber on this Fibrepulper is fitted with a stainless steel plate ⅛ in. thick with ¼ in. holes arranged so that it can be easily removed and replaced when necessary. The plate is kept clean by means of a vibrating diaphragm.

The bottom of the extraction chamber is connected to a pipe-type regulator box equipped with an adjustable dam to regulate the extraction rate of stock from the Fibrepulper. Pulping is by an impeller designed to give maximum defibering and circulating action. Blade segments which are removable have steel leading edges tipped with colmonoy, a highly wear-resistant metal.

The underside of the impeller is equipped with banger irons to eliminate accumulation of foreign materials between the rotor and the bottom of the tub. The impeller, dynamically balanced for smooth operation, is mounted directly on a shaft extension from the drive.

The drive is the characteristic Downingtown spiral bevel pinion and ring gear unit, totally inclosed, pressure lubricated and with anti-friction bearings throughout. The case is split horizontally to facilitate maintenance. The gear drive is designed to handle loads to 500 hp. which provides an ample safety factor. A transparent plastic covered port is installed in the side of the drive casing above the level of the ring gear for observation purposes.

The junk remover is set at a precise, predetermined angle tangent to the Fibrepulper tub. The junk remover continuously discharges accumulated junk at the upper floor level in a box truck. It is driven by a 1½ hp. variable speed motor, controlled from the upper floor level.

The rag catcher consists of a steel conveyor set perpendicular to the tub. Steel hooks protrude into the pulper which catch the rags and convey them to the upper floor where they are discharged onto a chute and into a box truck. The rag catcher is driven by a 1½ hp. variable speed gear motor. Junk remover and rag catcher are by Downingtown.

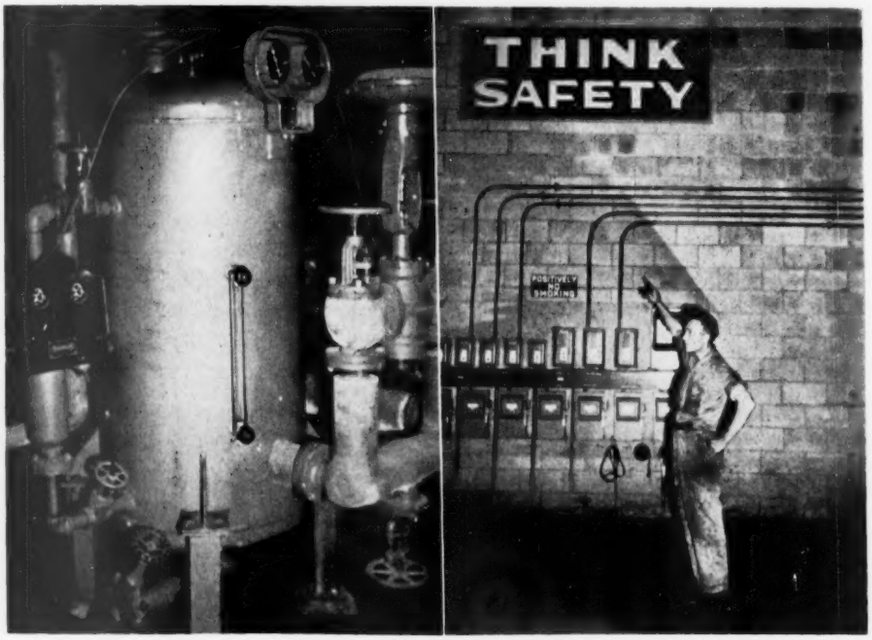
The various chests, built by Flintkote, are equipped with 42 in. 3-bladed agitators with adjustable blades driven by 15 hp. gear motors. They are designed to handle 5000 gpm of stock, which, upon conversion, results in a stock travel in the refiner and thickener dump chests of 20 fpm.

FLINTKOTE EXECUTIVES: WILLIAM C. BIRDSEY (top left), Manufacturing Mgr., West Coast Flintkote operations; PHILIP F. PAUL (top right), Division Mgr. for both Los Angeles and San Leandro. ERNST TONJES (bottom left), Chief Engineer, Pioneer Division, The Flintkote Co.; PHARES S. HORST (bottom right), Field Engineer for Pioneer Division.

The Batch Fibrepulper

One Type 3B Fibrepulper for the batch system handles stock at 6% consistency for top and bottom liner systems. This Fibrepulper is equipped with an extraction chamber, at the bottom covered with ¼ in. stainless steel plates with 1 in. perforations. Two 12 in. hydraulically operated dump valves are provided and are operated from the upper floor level.

From this Fibrepulper, stock passes through two Shartle Hydrafiners and is cycled through two large, vertical cycling tanks. From there stock goes to four No.



(LEFT) Part of the MIDWEST FULTON dryer drainage system on the San Leandro, Calif., paperboard machine. Note MASON-NEILAN condensate liquid level controls to the left. (RIGHT) "SAFETY FIRST" is constantly emphasized by management and foremen of the Flintkote Co. Here C. J. "RED" BRAY, Machinetender, points to one of the large "Safety First" signs to be found throughout the plant.

2-OD Emerson jordans, each driven by a 200 hp. Westinghouse synchronous motor.

A three stock cypress headbox handles the furnish to machine screens. The machine is equipped with six 5 in. diameter steel mix boxes with mixing heads and adjustable stock and white water mixing controls. Before entering the machine, stock is screened through six bronze 12-plate Impco flat screens.

The Machine Description

The new machine has six vats, is 128 in. wide with a trim of 112 in. It has six Conflow vats, ends of which are cast iron, bronzed fitted and they are equipped with clean out doors, white water openings both front and rear. An overflow dam is installed on front and rear vat ends to control the white water level. Body baffles and circles are constructed of cypress. The making board is adjustable and fitted with wings which are also adjustable.

Vats have 48 in. diameter by 128 in. face cylinder molds, with stainless steel faces and mounted on roller bearings. Primary water is removed by a 24 in. diameter plain extractor with an 18 x 132 in. wide face cast iron, rubber covered couch roll with steel journals mounted on roller bearings.

The press section contains five pairs of rubber covered primary press rolls mounted on roller bearings; and two pairs of plain main press rolls, bottom rolls rubber covered and top rolls Stonite covered, mounted on roller bearings. Stowe-Woodward covered 16 rolls in all for the machine, including all the large rolls.

The machine also has rubber covered felt rolls, stainless steel savealls, felt guides, and Lodding oscillating doctors.

There are two Nash Hytor vacuum pumps, one for flat suction boxes and the other for Bird Vickery felt conditioners.

The dryer section consists of 66 dryers mounted in a two-deck arrangement. Each dryer is 42 in. diameter by 122 in. face made of cast iron tested to 150 psi and mounted on self-aligning bronze lined ring oiling bearings. One 24 in. receiving dryer is also installed. Other equipment includes cut tooth, semi-steel gears, steel pinions, Johnson steam joints, steel pinch rolls, a steel spring roll, and 10 Lodding dryer doctors.

A Midwest Fulton dryer drainage system is provided. The dryer rolls are so mounted on the frames that there is a 5 in. clearance between the bottom of the lower deck of rolls and the floor. This permits easy and convenient removal of broke.

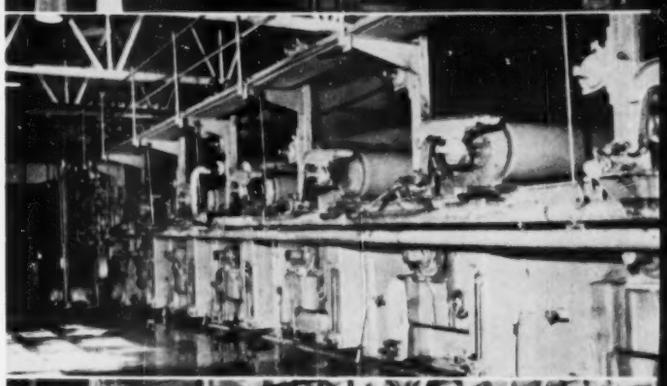
J. O. Ross Engineering Corp. provided the hood with six fans with combined capacity of 124,000 cfm.

The machine is driven through spiral bevel gear floor drives which transmit power through cone pulleys from a line shaft which is in turn driven by a Terry steam turbine, operating at 225-lbs. initial pressure, and 60-lbs. back pressure.

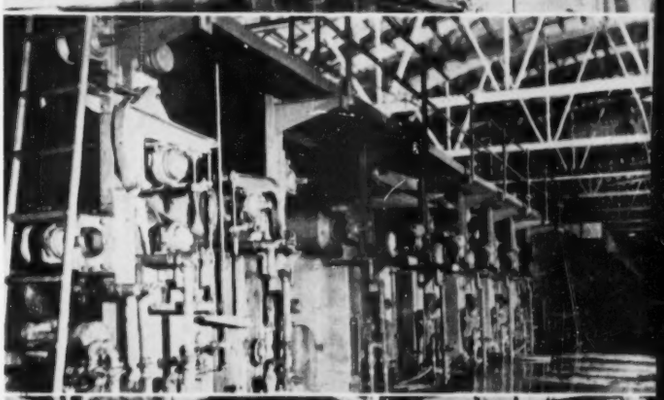
There is one seven roll and one nine roll Lobdell calender stack. Each stack has three Lodding calender doctors and is driven through a Falk reduction gear.

A two-drum upright reel is fully adjustable and is equipped with friction

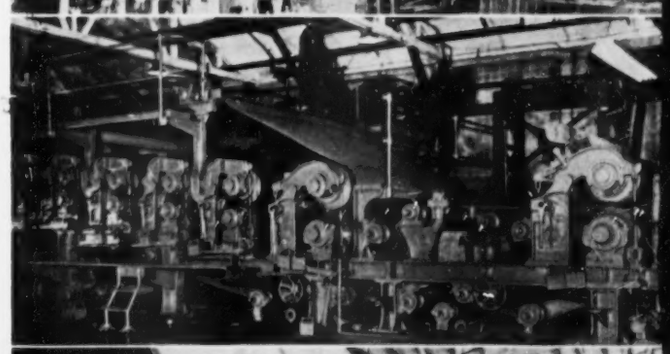
EMERSON MANUFACTURING CO., Division of John W. Bolton & Sons., Inc., provided the three No. 1 Emerson Jordans shown at right, and four in all for stock preparation at San Leandro. Also shown are IMPCO flat screens and mix boxes.



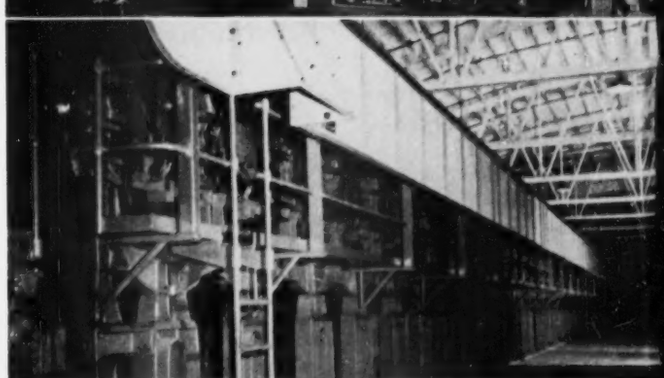
LOOKING TOWARD PRESS and dryer sections of this Downingtown 6-cylinder, 128 in. wide machine for paperboard at The Flintkote Co.'s new mill. This is back side of the machine and shows the vat section.



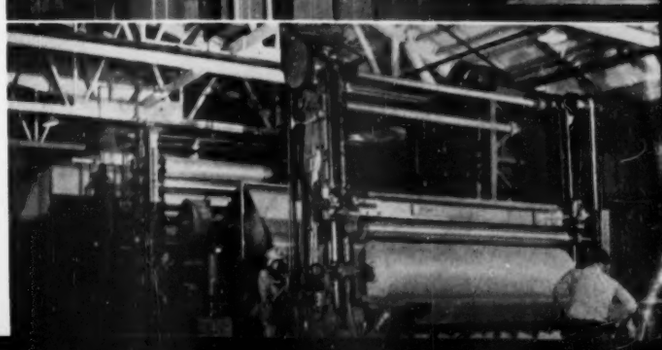
GENERAL VIEW of new **DOWNINGTOWN 112** in. trim machine of designed capacity of 75 tons at the Flintkote Mill built in San Leandro, Calif. The machine is viewed here from its wet end.



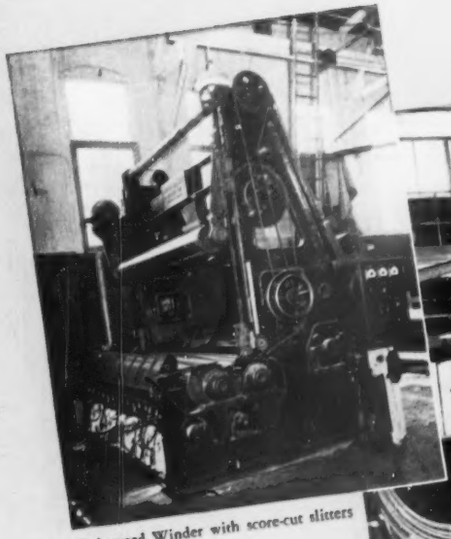
DOWNINGTOWN PRESS SECTION with Stowe-Woodward covered rolls in the new San Leandro Paper Mill built by The Flintkote Co. In center at right are first and second 24 in. press rolls. Loading is by mechanical weighting.



ROSS ENGINEERING provided hood and air system for new paperboard machine at Flintkote's San Leandro Mill. This dryer section has 66 cast iron rolls. At top foreground is receiving dryer roll.



AT DRY END of new San Leandro Machine are shown, l to r, two **LOBDELL** calender stacks, then **DOWNINGTOWN** upright reel and its rewinder with independent slitter and slitter drive.



High-speed Winder with score-cut slitters

High-speed Winder with shear-cut slitters

Modernize with a NEW Puseyjones Winder . . .

Puseyjones Winders, industry-wide, are keeping ahead of the requirements set by the fastest paper machines — producing top quality shipping and converting rolls of kraft, book, news, paperboard and tissue at speeds up to 6000 F.P.M.

Among the features incorporated in the Puseyjones Winder are:

(1) Separately driven winder drums

(2) Roll-weight relieving air cylinders

(3) Push-button controlled driven rider-roll lift

(4) Hydraulic-operated roll ejector and unloader

The latest type individual motor-driven shear-cut slitters or score-cut slitters are optional, depending upon mill preference.

The satisfactory performance of the Puseyjones Winder is evidenced by the fact that one mill now has six in operation.

Let us show you how a modern, high-speed Winder will step up production, increase profits. Write us today — we will have our District Representative call.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery

Fabricators and Welders of all classes of Steel and Alloy Products

Wilmington 99, Delaware, U.S.A.

THE SIGN OF TRADE MARK SUPERIOR QUALITY

brakes. The rewinder is of the drum type with well designed heavy frames. The drums are 18 in. diameter with 124 in. face, grooved and mounted in anti-friction bearings. The slitting arrangement consists of six top and double edged bottom slitters, operated by a separate drive. Reel and rewinder are by Downingtown.

Steam Plant

The steam plant was provided by Combustion Engineering, with a 40,000 pph water tube boiler, with water cooled side walls 250-lbs. designed pressure, and a Graver hot lime and soda treating plant for the boiler water equipped with a deaereating heater.

Natural gas is supplied by the Pacific Gas & Electric Co., but the boiler is equipped to use fuel oil, if gas is unavailable. The boiler is equipped with Bailey steam flow, air flow controls, and forced and induced draft fans. Other instruments are by Foxboro.

Steam flow meters for paper mill and container plant are by Foxboro, as are pressure meters on the Midwest Fulton drainage system. The condensate liquid level controls on this system are Mason-Neilan.

Other Auxiliary Equipment

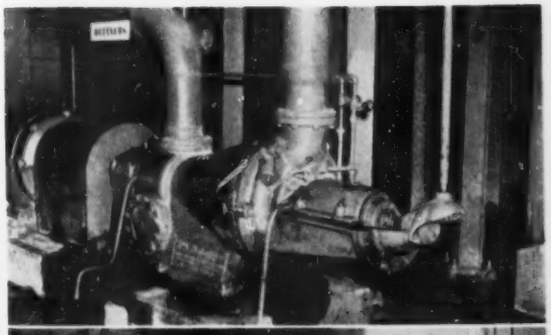
Flintkote has put in two Bird Savealls. One takes water from the cleaner sections of the machine, recovers fibers and discharges effluent into a clean water chest. The other takes less clean water, recovers stock, and the water is discharged into the white water chest.

Paper stock valves are by Eastwood-Nealley, furnished by the Pacific Coast Supply Co., and Record Foundry & Machinery Co.

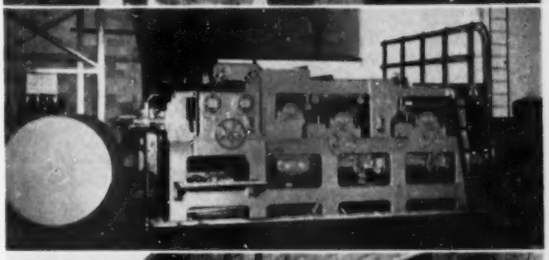
A Masson-Scott Duplex Super board cutter has been installed to convert the board into sheets. This machine, developed in England, was introduced to the industry in this country by Downingtown in 1952.

Pumps in stock preparation system are Downingtown-Economy, including one 1700 gpm centrifugal suction pump; one

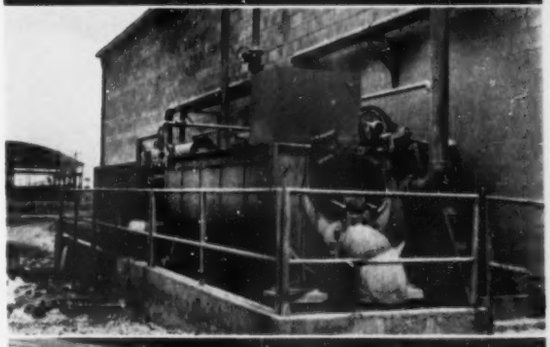
(Continued on page 126)



SHARTLE BROS. HYDRAFINER is one of units in Flintkote's San Leandro mill stock preparation. This is used with another Hydrafiner in handling stock for top and bottom liner systems ahead of jordans.

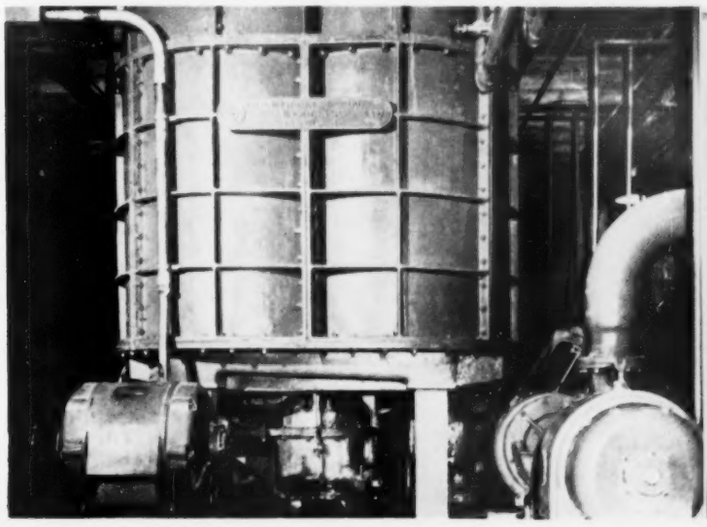


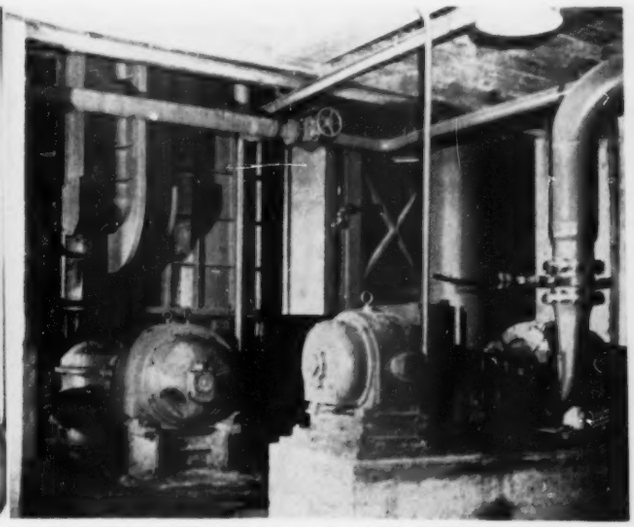
DOWNINGTOWN MASSON-SCOTT Duplex Super board cutter, introduced in this country from England, is one of prize units at new Flintkote mill.



Two BIRD SAVEALLS are used here at the San Leandro mill to recover fibers. One is for cleaner water from the new paperboard machine; one for less clean water.

GMC TRUCK, WITH TRAILMOBILE trailer, leased by Flintkote, is being loaded with finished shipping containers at San Leandro. Loading and handling of all materials around the plant is with fork lift trucks.





(LEFT) BATCH TYPE FIBREPULPER showing motor with V-belt drive and Downingtown gear drive unit, with stock pump at right, at San Leandro, Calif., plant of Flintkote. **(RIGHT) CONTINUOUS TYPE DOWNINGTOWN FIBREPULPER** at San Leandro, showing lower portion with motor directly connected to gear drive unit. Lower parts of rag catcher and junk remover are shown.

ONE contractor to completely rebuild and expand the Port Mellon Mill of Howe Sound Pulp Co. Ltd.

HSP

from the "Foundations" to the "Installation of the new pulp machines."

Under one contract and with our own personnel we undertook and completed all phases and details of construction for this newly rebuilt and expanded pulp mill.

B.C. BRIDGE & DREDGING CO. LTD.

511 HOWE ST. VANCOUVER 1, B.C.

THE NEW LOOK AT PORT MELLON ON HOWE SOUND

NEW AIR VIEW of Howe Sound Pulp Co. Ltd., now principally owned by Canadian Forest Products Ltd., one of Canada's big integrated timber operators. It has added market kraft pulp to its lumber, shingle, hardboard and plywood products, by acquiring this Port Mellon, B.C., mill, and its strong timber backing assures the future of this mill—one of the oldest in the Canadian West. However, it has been extensively modernized.

THE HOWE SOUND MILL

ONE OF BIGGEST TIMBER COS. NOW IN PULP

A BUSY ASSOCIATE of one of British Columbia's largest forest-industry corporations and a factor of growing importance in the province's production of unbleached sulfate pulp is Howe Sound Pulp Co. Ltd., whose mill is at Port Mellon, about 30 miles north of Vancouver, B.C., near the head of Howe Sound.

Canadian Forest Products, Ltd., which operates large lumber and shingle mills near Vancouver and plywood and hardboard plants at New Westminster, B.C., acquired a controlling interest in the Port Mellon mill in 1951 when it was owned by Sorg Pulp Co.

The Howe Sound mill today bears little resemblance to what it was then, because the entire operation has been improved and expanded, with modern equipment installed and the whole plant streamlined and reorganized for greater efficiency. Capacity has been increased from 130 tons to 175 tons daily.

The mill fits effectively into Canadian Forest Products' over-all policy of making fullest possible economic use of the raw material at its disposal. All chips used at Port Mellon are produced at the company's Eburne sawmills division and transported to the pulp mill by barge. As a result of this integration of company activity, waste has been virtually eliminated.

L. L. G. BENTLEY, President of Howe Sound Pulp Co. Ltd. He is also Vice Pres. of Canadian Forest Products Ltd., ranking as next officer of that big firm under Pres. J. G. PRENTICE.

The bright and attractive appearance of the Howe Sound mill makes it difficult for the visitor to realize that here unbleached kraft pulp has been manufactured for a longer period than anywhere else in Western Canada. Forty-two years ago, when pioneering companies such as Powell River and Pacific Mills were barely launched, pulp was being produced at Port Mellon, although production facilities there have changed ownership many times. Under present management Howe Sound Pulp Co. and the area it represents is virtually assured a permanent industry.

Sandwell & Co., Ltd., consulting engineers of Vancouver and Seattle, were retained as engineers for the Port Mellon expansion and also for the new barking and chipping installations at the Eburne Mills.

British Columbia Bridge & Dredging Co., already well known for some of the new pulp mill construction in western Canada, was awarded the general contract at Port Mellon.

Two major stages for the mill's renovation were planned. Stage I comprised the general repair and reconditioning of existing mill equipment prior to the mill start-up; its operation had been suspended in 1948 by previous owners. This was completed in about four months and the mill began operations again in June, 1951 at a rate of about 130 tons per day.

Stage II comprised modernization of the existing plant. This work was carried out during operations and cut-overs to new equipment were made as far as possible during regular maintenance shut-downs. The program was completed without serious delays and production has gradually risen to better than the designed 175 tons a day. Cost, including installation of barking and chipping facilities at Eburne Sawmills, was about $10 million.

President of Howe Sound Pulp Co. is L. L. G. Bentley, who is also vice-president of Canadian Forest Products, Vice-president is J. G. Prentice, president of CFP. William McMahan, a director, heads up the timber department for CFP.

Operating manager of the pulp mill is Dan F. Williamson, who was field engineer for Sandwell & Co. during the renovation program. Mark Watson, who was project manager for British Columbia Bridge & Dredging Co. during construction, is mechanical superintendent. Control superintendent is Wally Brown; electrical superintendent, Sig Peterson; chief steam engineer, Fred Bancroft, and comptroller, Harry Macdonald.

In studying the existing mill design with a view to increasing capacity it was determined that several sections—recovery, evaporators, and powerhouse—were of modern design and capable of supporting the proposed production. In other sections—digesters, washing, screening, and pulp drying—it was decided that by modernizing and in some cases enlarging, they could also be made to maintain requirements. Certain sections—in particular wood preparation, chip handling and causticizing plants—were entirely replaced and so were some services such as sewer, water and fire protection systems.

Both high and low tension electrical systems were completely rewired. Use was made of most existing switchgear, motors, and starters, new equipment being chiefly in completely new plants.

All plants were designed with a view to future expansion and in most cases it was possible to arrange designs so that capacity could be doubled with a minimum of difficulty.

GEOGRAPHIC RELATIONSHIP of Port Mellon mill of Howe Sound Pulp Co. to Eburne Sawmill Division of Canadian Forest Products, source of chips. Woodfibre, to north of Port Mellon, is location of one of Alaska Pine & Cellulose bleached sulfite mills.

Wood Preparation Plants

Existing wood preparation plants, consisting of a break-down sawmill designed to produce lumber, drum barkers and chipping facilities were found to be unsatisfactoy for the new program.
storage facilities of any extent were available.

The company decided to dismantle the lumber, barking and chipping plants and to produce chips from mill leftovers and low grade logs at its sawmills. (The new Eburne operations are described at the end of this article.) These chips are delivered to Port Mellon in large open chip barges.

A new 300-ft. long scow dock was required to berth the chip barges during unloading. Mounted on this dock is a Colby double cantilever, travelling, chip unloading crane with 11,000 lb. lifting capacity. Chips are conveyed to a Canadian Sumner vibrating chip screen, designed to handle 15,000 cu. ft. per hr. and to remove large slivers and foreign material picked up after screening at the sawmills. The screen is 6 x 10 ft. and has a 3½ x 3½ in. mesh.

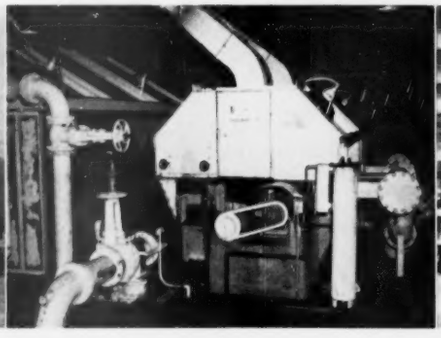
Accepted chips are conveyed up an inclined conveyor to storage silos, on 36 in. rubber belting running in 45° Link-Belt troughing idlers.

Six 40-ft. diameter, 80 ft. high concrete silos provide adequate storage and allow segregation of the different species of wood. Two Link-Belt 36 in. trippers, one over each section of three silos, permit easy selection.

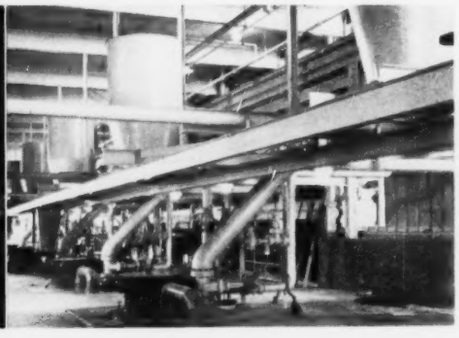
Chips are discharged from silos by 17 ft. Link-Belt rotary plate type chip feeders. A system of conveyors then transfers chips to digesters. Tramp iron is removed by permanent magnetic pulleys and a 36-in. Link-Belt tripper, which automatically positions itself, discharges chips into se-

SIX CONCRETE SILOS for chips were built by B. C. Bridge & Dredging Co.; they are 80 ft. high, with 40 ft. diameter.

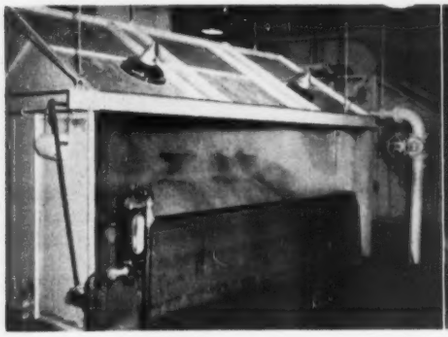
TWO JONSSON KNOTTERS take pulp from the fine screens, and rejects from the knotters are refined and sent to digesters.



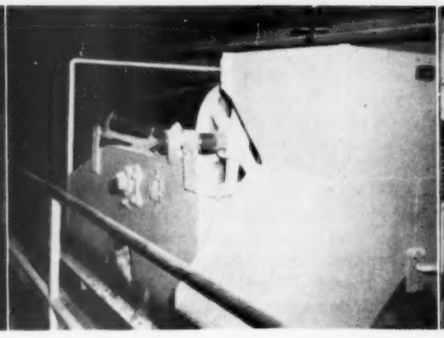
DIGESTER OPERATING FLOOR at Howe Sound Pulp Co. Port Mellon mill. Digesters were built by Vancouver Iron Works.



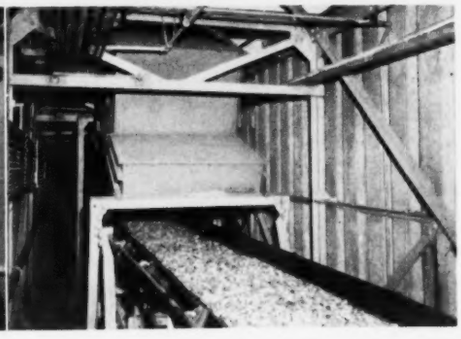
TWO-STAGE SWENSON-NYMAN pulp washer capacity has been doubled and new liquor and filtration tank system installed to reduce soda losses.

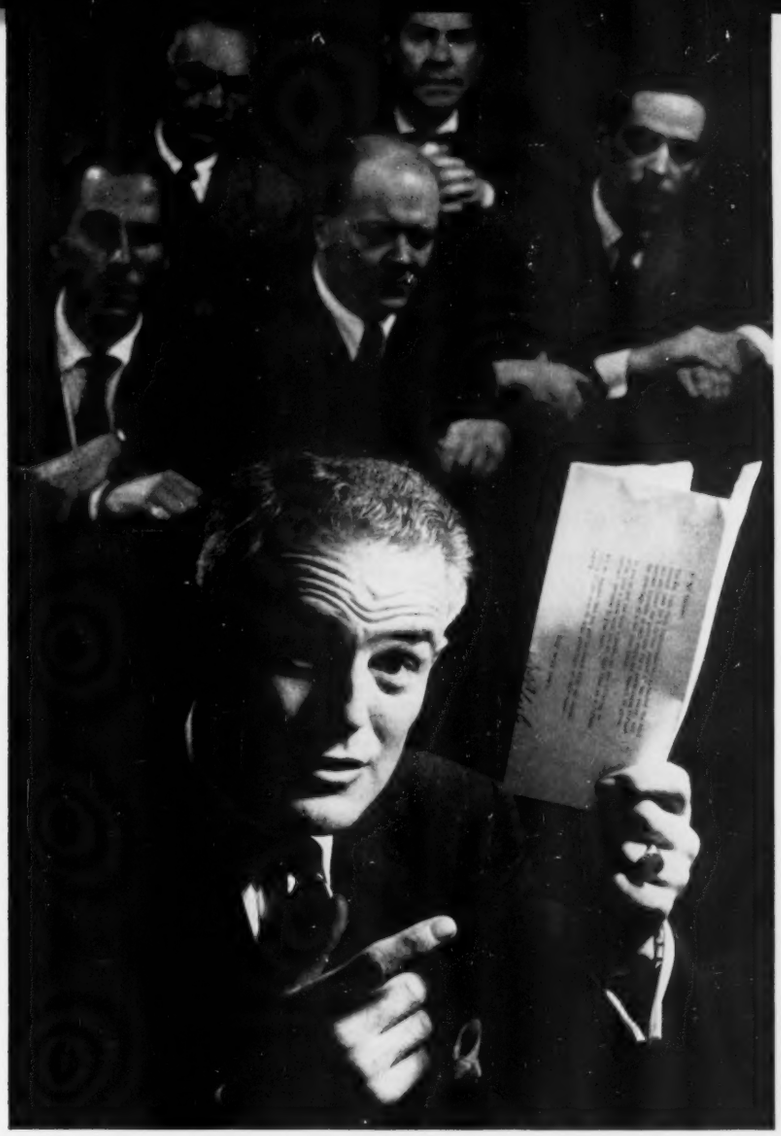


ONE OF LINK-BELT 36-in. tripper serving chip silos at Howe Sound Pulp Co., Ltd., permitting easy selection of any bin.



MERRICK WEIGHTOMETER provides automatic weighing of chips in the conveying system at the Port Mellon, B.C., mill.





"MODEL STAR" GATE VALVE *(Fig. 1793)* for 125 pounds W.P. Iron body, bronze mounted. Supplied with taper solid wedge. Sizes 2" to 30", inclusive.

AN OPEN AND SHUT CASE

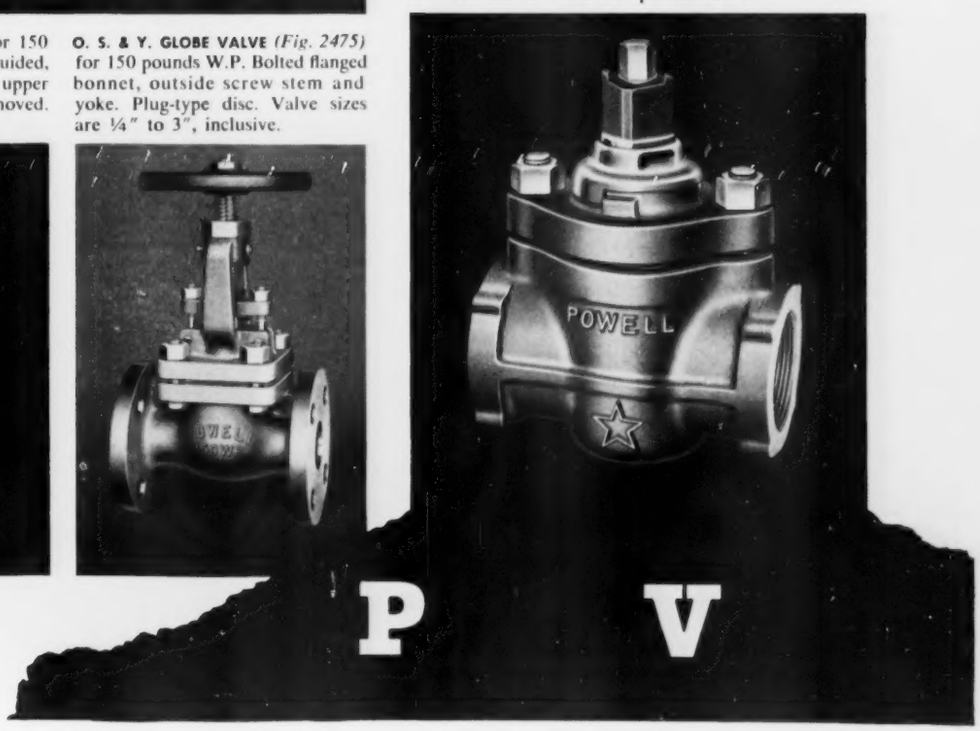
All the evidence is in. Powell Valves have a record of dependability since 1846. Powell makes more types of valves, has probably done more valve research and solved more valve problems than any other organization in the world.

On the basis of such overwhelming evidence, can your verdict be anything but a decision in favor of Powell Valves? See exhibits following.

LUBRICATED PLUG VALVE *(Fig. 2200 SE)* available with Screwed or Bolted Glands. Semi-Steel valves available for 175 and 200 pounds W.O.G. Carbon Steel valves available for 150 and 300 pounds W.P.

O. S. & Y. "Y" VALVE *(Fig. 1944)* for 150 pounds W.P. Stem is threaded, guided, rises through a bronze bushing in upper yoke. Disc can be quickly, easily removed. Sizes 2½"to 12", inclusive.

O. S. & Y. GLOBE VALVE *(Fig. 2475)* for 150 pounds W.P. Bolted flanged bonnet, outside screw stem and yoke. Plug-type disc. Valve sizes are ¼" to 3", inclusive.



lected digesters, after weighing by a Merrick automatic Weightometer.

The chip system from plate feeders to digesters is automatically controlled from a single console on the digester operating floor. In charging, a pre-determined charge is set on the Weightometer regulator and selection is made of the required plate feeder and digester to be charged. A single control then operates in correct sequence.

Pulp Mill

The existing digester plant consisted of four digesters of four tons capacity each. Two additional digesters fabricated by Vancouver Iron Works were installed. Chip conveyors and building designs have been made with a view to increasing plant capacity by increasing the size of the present digesters through extending their length in preference to adding more digesters.

Esco (Electric Steel Foundry) indirect heaters were installed on all digesters. The existing steel blow tank was retained and a blow heat recovery system installed. The condenser is a Swenson Evaporator Co. blow steam surface condenser. An automatic liquor measuring and filling system was installed for measuring and recording the digester liquor charge. Foxboro automatic sulfate digester steaming controls were installed on the new digesters to match units already on the original digesters.

Washing

The existing pulp washing plant consisted of a single two-stage 9 x 12 Swenson-Nyman pulp washer. An additional two-stage washer of identical design was installed along with a new liquor and filtrate tank system, to complete a four stage system on which soda losses would be considerably reduced.

Two Jonsson pulp knotters supplied by Canadian Ingersoll-Rand Co. were installed ahead of the washers. Rejects from knotters are refined and returned through a wet knot handling system to the digesters as a part of the black liquor charge.

Hoods and ventilation equipment designed and supplied by Ross Engineering of Canada were installed over washers and knotters.

Fischer & Porter Co. supplied all flow measuring instruments throughout the the mill. Foxboro process controls together with Masoneilan control valves were generally installed.

Personnel at Howe Sound Pulp Co., Ltd., operation at Port Mellon, B.C., include (l to r): DAN F. WILLIAMSON, Mill Manager, WALLY BROWN, Control Supt., MARK WATSON, Mechanical Supt., SIG PETERSON, Electrical Engr., FRED BANCROFT, Chief Steam Engr., HARRY MacDONALD, Comptroller.

In order to provide a means of proportioning quantities of fir and hemlock in the pulp and to provide buffer storage after the washers, a high density storage system was installed. Two 28 ft. diameter, 50 ft. high concrete silos were erected. One is for hemlock and one for fir. Stock is held at 16 percent air-dry. Hydraulic apparatus by Sherbrooke Machineries is used for diluting the stock so that it may be pumped under ratio-flow controls from the silos.

Screening

The existing screening system was completely renovated. The screened and unscreened stock chests were improved by installing suitable mid feathers and Kamyr-designed agitators fabricated by Paper Machinery Ltd.

Five Trimbey screens were retained as primary screens and two Reed-Spafford screens retained as secondary screens. A closed rejects system was installed, consisting of a slush type thickener, a rejects storage chest, E. D. Jones refiner and two Waterous flat screens. Rejects had been sewered.

Union Screen Plate Co. of Canada supplied the screen plates for flat screens.

In place of several slush type deckers, two large gravity deckers utilizing molds from the existing cylinder pulp drying machine were fabricated by Heaps Waterous and installed after the screens.

Stock before and after screens and deckers is regulated by two DeZurik consistency regulators. Most white water and black liquor pumps were from Bingham.

Pulp Drying

Pulp drying on a modified board machine comprising a cylinder mold, felt presses, smoothing roll, cylinder dryers, rotary cutter and baling press, was unable to maintain the proposed increased capacity. A second machine, a small Fourdrinier, produced about 30 tons per day. It was decided to improve the large machine so it would dry the entire mill production.

A new wet end was installed which consisted of an 11 ft. 6 in. diameter Oliver sheet former supplied by E. Long Ltd., a grooved rubber press supplied by Heaps Waterous, two H700 Kamyr presses supplied by Paper Machinery Ltd. and a rubber smoothing press by Heaps Waterous. The sheet is heated in the press section by direct steam showers.

The stock system was revised to provide better consistency regulation and greater storage. A new Kamyr type stock chest replaced a small wood stave chest. Consistency is regulated after this chest by a DeZurik consistency regulator.

Some revisions were required for the cylinder type dryer section. A new insulated aluminum hood by Ross Engineering of Canada replaced a wooden hood. A new Ross vapor absorption air system was installed.

A new rotary cutter with automatic layboy by Lamb-Grays Harbor Co. replaced a light inadequate cutter.

An extension was added to the pulp warehouse since it was planned to ship a large quantity of pulp by deep sea freighters. Rail cars are loaded at the warehouse and moved by a yard engine onto barges via a new car barge rail slip, for shipment to Vancouver rail terminals. The slip also provides facilities for bringing in raw materials and supplies without the necessity of first unloading cars in Vancouver and handling material twice.

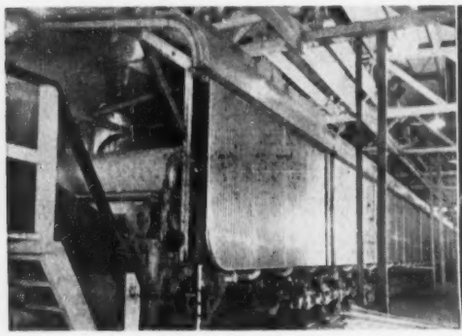
Chemical Plants

The batch type causticizing plant was in poor repair and no provision was made for recovery of lime mud. It was decided to erect a continuous system with a kiln after the recovery of lime. Both the new causticizing system and lime reburning plant are designed to permit doubling of the plant capacity by installing identical equipment immediately north of present plants. Lime mud from the washer goes to a storage tank from which it is pumped to a 6 x 6 ft. Oliver lime mud filter where the mud is washed and thickened prior to entry into a 250 ft. long Traylor lime kiln built by Canadian Vickers.

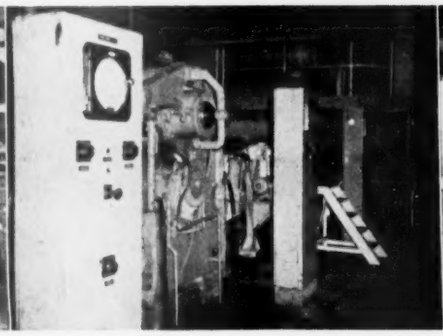
Burned lime is conveyed by drag conveyor and bucket elevator to a storage bin from which it is fed by a plate feeder at any desired rate to the causticizing plant.

The slaker, causticizers, clarifiers and washers for the continuous causticizing plant were sup-

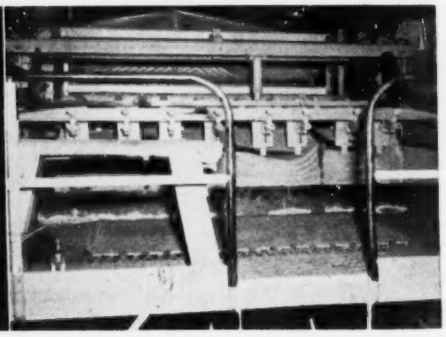
INSULATED HOOD by Ross Engineering of Canada replaces wooden hood previously used on pulp machine. Ross Engineering also installed a new vapor absorption system.



MASONEILAN control valves were installed in the machine room as well as in other sections of the plant.



AUTOMATIC LAYBOY AND CUTTER were provided by Lamb-Grays Harbor Co. for Howe Sound Pulp Co. mill. This is a new rotary unit.



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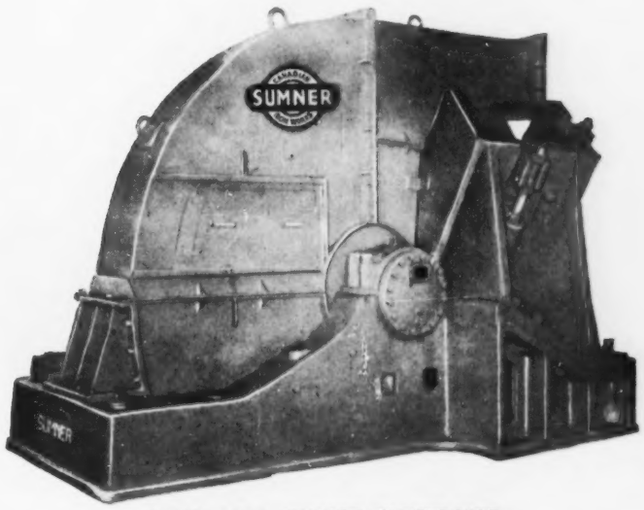

THEIR 112" CHIPPER ILLUSTRATED

FOR CANADIAN FOREST PRODUCTS LTD.

3— 54" 8 KNIFE CHIPPERS
2— 66" 8 KNIFE CHIPPERS
1—112" 6 KNIFE CHIPPER
1—SPECIAL WIRE MESH CHIP SCREEN
1—PUMP & HYD. CYLINDER FOR CHIPPER APRON

7—ROLL CASES TOTALLING 43 CONCAVE ROLLS CHAIN DRIVEN
3— SPECIAL LOG UNLOADERS WITH 18"x30" CLYINDERS
3—LOG STOP & LOADERS
4—LOG DECK TRANSFERS
1—SET LOG DOG JAWS
1—84" SWING CUT OFF SAW
TEN-SPEED REDUCERS

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plied by the Dorr Co. This plant is generally of outdoor construction although all process and electrical controls are housed in a single closed structure from which the entire plant can be controlled. Storage tanks for green, white and wash liquors were supplied by Dominion Bridge Co.

For causticizing, all Dorr equipment was capable of withstanding the fairly heavy precipitation experienced at Port Mellon, provided that all motors were of the totally inclosed type, that all V-belt and chain drives were protected with weather-tight covers and that insulating materials were applied to tanks and pipelines.

Although the causticizing plant has been in operation only a short time, many of the expected advantages over the previous one are already apparent. A better quality of white liquor is produced as evidenced by the uniformity in the active alkali and the improved clarity. Commercial lime consumption and soda losses were reduced.

In 1948 just prior to closing of the plant a new chemical recovery boiler by Combustion Engineering together with a Swenson vertical, multiple-effect evaporator system had been installed. Little work was required to place it in operation.

A Cottrell electrostatic precipitator was installed. This unit will remove 90% of the suspended materials from the flue gases, again reducing plant chemical losses.

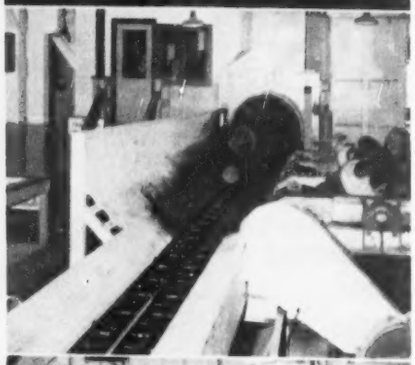
Bagged saltcake makeup had previously been added to the system from a small storage bin. Considerable economy could be realized by purchasing saltcake in carload lots, so a storage silo with a pneumatic system by Conveyair was installed.

Services

The mill water supply is obtained from Rainy River which drains the surrounding watersheds. Water is brought from the river intake through a 32-in. wood stave penstock.

Sewers were in poor repair and it was decided to install an entirely new closed concrete pipe sewage system.

The existing powerhouse built in 1948 was retained. A Canadian Westinghouse 3000 kw turbo-generator was installed at that time, and 500 kw turbo-generator was repaired and relocated. An existing 1500 kw turbine, for which provision had been made in the design of the powerhouse, was moved to this location, thereby centralizing all generating facilities. The 500 and 1500 kw turbines are auxiliaries.



(TOP) WHOLE LOG CHIPPER supplied by Sumner Iron Works, served by Marathon Electric 500 hp synchronous drive motor, at Canadian Forest Products' Eburne, B.C., sawmill and plant producing chips to serve the Howe Sound kraft mill at Port Mellon.
(MIDDLE) ENTRANCE TO HANSEL WHOLE-LOG hydraulic barker at the No. 3 sawmill of Canadian Forest Products. Barker is served by Esco conveyor chain.
(BOTTOM) POROSTONE FILTERS to treat the water used at No. 3 mill are Adams-type, manually operated units.

CHIP PRODUCTION FOR PORT MELLON

HOWE SOUND PULP CO.'s mill at Port Mellon B.C., as previously stated, has no woodroom. All chips are delivered by scow some 35 miles from the No. 3 plant of Eburne Sawmills Division, Canadian Forest Products, Ltd., at the mouth of the Fraser River, near Vancouver.

All manufacturing units of Canadian Forest Products are dedicated to the overall objective of making maximum economic use of the raw material, which in this case consists mostly of Douglas fir and hemlock from the company's forest operations in the Nimpkish valley of northeastern Vancouver Island and elsewhere.

Nos. 1 and 2 mills of the Eburne Division are devoted to the processing of larger logs, primarily for lumber; No. 3 mill, a gangsaw operation, is used for the smaller diameter logs and it serves as an essential key in the chain of utilization as the main source of chips for the Port Mellon pulp mill.

Initially the full pulp chip requirements of Port Mellon were manufactured from left-overs in the Nos. 1 and 2 mills. During development of chip reclaiming equipment for these two mills it was considered necessary to provide some means of chipping whole logs to make up any deficiency in chip supply and to provide chips in case of major breakdown in either plant. The No. 3 mill provided an excellent location for this whole log chipping plant, and the necessary equipment was installed there with barker and waste chipper.

Sandwell & Co., as stated, also did the engineering of the barking and chipping installations.

Existing facilities at No. 3 mill consisted of a 30-in. Heaps gangsaw for breaking down the logs into boards at 15 to 20 fpm. Boards and slabs are passed through an edger to the trimmer deck, and thence to green chain. Waste slabs and edgings are slashed to 4 ft. lengths at the trim saws and dropped through deck skids into a waste conveyer.

The basic plan for layout and construction of the barking and chipping plant at No. 3 mill was determined on the assumption that the future output of the Port Mellon mill was not likely to exceed 200 tons per day of kraft pulp requiring about 500 units of chips per day (100,000 cu. ft.). Barking and chipping equipment was selected to meet those requirements.

In construction of the building to house this new equipment, timber frame was adopted. Trusses and operating deck are of timber supported on pile footings with concrete caps. The basement floor is a concrete slab on grade. Flat roofs and trusses were used to facilitate future extensions. A bonded tar and gravel roof was applied. The operating deck is 6 in. tongue and groove fir. This heavy mill construction is favored throughout the Eburne mills. It provides for heavy floor loadings, such as when a log is dropped from a deck.

All conveyers and decks are of fabricated steel mounted on timber bolsters built up from the operating floor support beams. These bolsters have steel plates bolted in place at suitable points to receive the equipment. After alignment, conveyer frames were welded to the sole plates. All major conveyers and deck drives were arranged in such a way that drive chain tensions would be carried back into the conveyer frames.

A 36 in. Hansel ring type barker was selected for water economy, suitability for log diameter range and ready access for maintenance. The barker requires 600 gpm at a pressure of 1350 psi at the nozzles. A Bingham 4 x 4 x 10 in. eight stage centrifugal pump was provided. The 600 hp 3600 rpm electric motor drive for the pump was supplied by Elliott Co.

The whole log chipper is a 6-knife Canadian Sumner 112 in. disc handling up to 26 in. diameter logs. The engine-type drive motor is a Marathon Electric Corp. 500 hp synchronous unit.

Chips discharge to a multi-strand chain conveyer operating in a 4 ft.-6 in. wide by 2 ft. deep trough. This conveyer discharges into a 48 in. wide Goodyear belt conveyer feeding directly into the chip surge bins ahead of the screens.

In addition, there is a small, high-speed 8-knife Sumner chipper which converts slabs, edgings and trimmings from the sawmill into chips. The disc diameter is 54 in. Chips are blown into a cyclone and loaded onto a 24 in. troughing belt, which in turn feeds them into the main 48 in. belt conveyer from big chipper, and thence to the chip screen feed bins.

Two Dillon circle-throw vibrating screens of three-deck design are mounted side by side with a common surge bin

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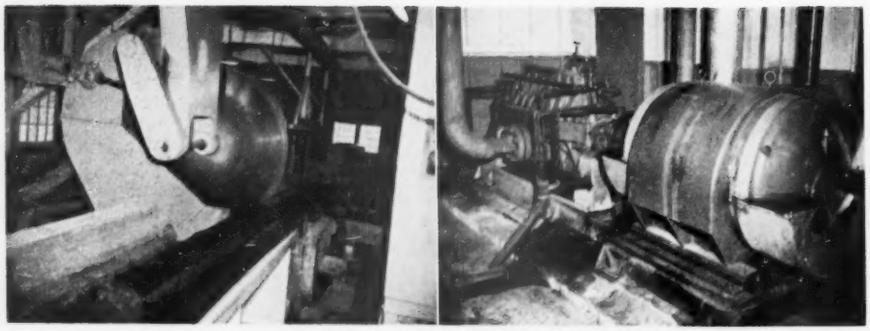

above. Star-type feeders distribute the chips to each of the screens. Plows mounted on big belt conveyer divert chips to either screen or divided between the two.

At the top of the log haul the 84 in. swing cutoff saw of Sumner design is driven by a 60 hp General Electric motor at a peripheral speed of 14,000 fpm. Log jaws for holding the log while sawing were not provided, but one roll on each side of the saw was mounted higher than the balance of the roll case to insure that the log would be supported at the cutting point.

The deck chains throughout the mill were supplied by the Link-Belt Co.; manganese steel conveyer chain was from Esco, Ltd. (Electric Steel Foundry).

The belt conveyers delivering chips to the scow loading station in the Fraser River are conventional 24 in. belting. Maximum capacity is 60 units per hour at 600 fpm. Steel roll, anti-friction troughing idlers were used.

(LEFT) LOGS ARE CUT to required length by Sumner designed swing cutoff saw 84 in. in diameter, at Canadian Forest Products' Eburne, B.C., sawmill. (RIGHT) BINGHAM BARKER PUMP (at left) is a 600 gpm 8-stage unit; drive motor at right, 600 hp, 3600 rpm, was supplied by Elliott Co.

New Editor Appointed at Institute

Westbrook Steele, president of The Institute of Paper Chemistry, has announced appointment of Jack Weiner as editor of the Institute, succeeding the late Dr. C. J. West. Mr. Weiner comes from the Library of Congress where he has held positions in the technical information division since 1948, his present position being that of supervisor of the subject cataloging unit. Previously, he had been an organic research chemist and literature research chemist.

He attended Long Island University and C.C.N.Y., and pursued postgraduate studies at New York U. and Agriculture Graduate School in Washington, D.C.

Walton to Chicago; McKenzie to Seattle

C. L. (Chuck) Walton has resigned as manager of the fiberboard plant of Simpson Logging Co., Shelton, Wash., and moved to Chicago, Ill., to accept a managerial position for some of the U.S. Gypsum mills.

William McKenzie, chief engineer for Simpson, now has title of director of engineering and has moved to Seattle headquarters from Shelton.

RONALD M. MELVIN, now appointed to Chicago office of Powell River Sales Corp.

PULP REP. FOR POWELL RIVER

RONALD M. MELVIN has been appointed to Chicago office of Powell River Sales Corp., succeeding TERRY HOLLERN, now with the company's newsprint organization on the U.S. West Coast. Mr. Melvin worked at Powell River in 1947-48 during summers while attending University of British Columbia. After graduating in commerce, 1949, he returned permanently. Two years ago he joined the sales staff of British Columbia Mfg. Co., a Powell River subsidiary. Powell River Sales Corp. has offices in San Francisco, Los Angeles, New York, Chicago and Seattle, for newsprint and pulp sales and service. The Chicago office handles pulp sales only.

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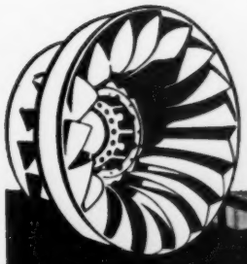
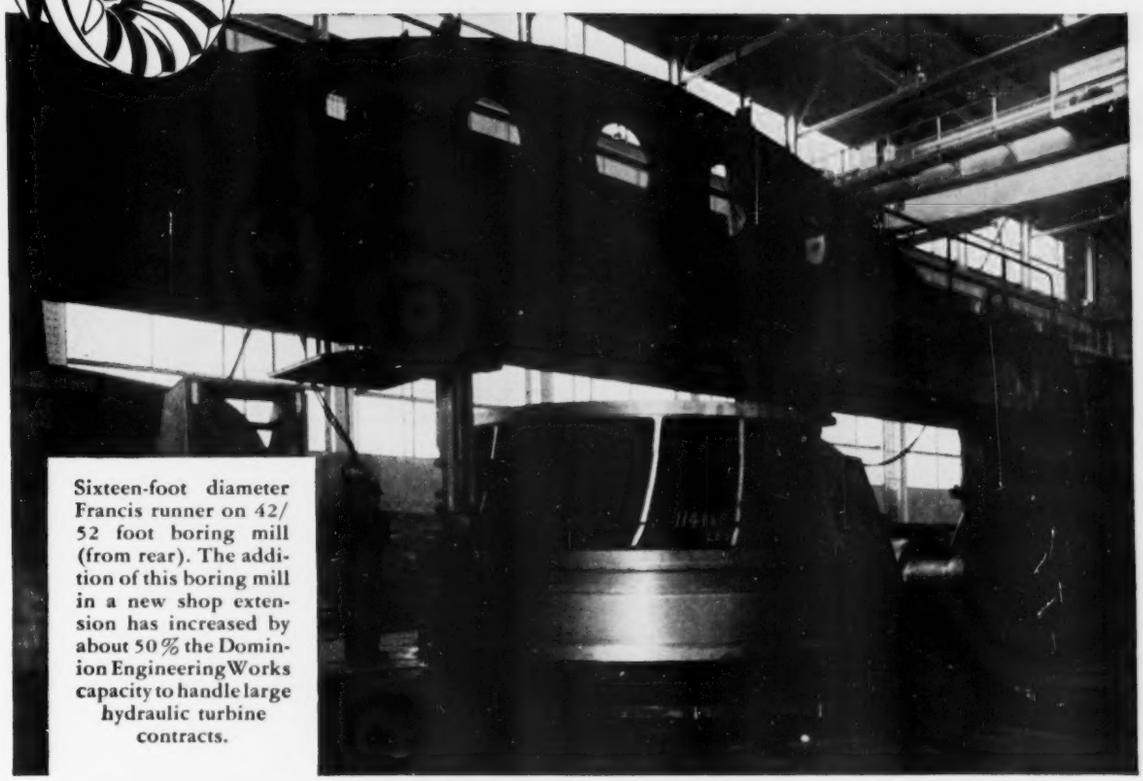


IN CANADA AND NEW ZEALAND...
IN BOLIVIA AND BRAZIL...



Sixteen-foot diameter Francis runner on 42/52 foot boring mill (from rear). The addition of this boring mill in a new shop extension has increased by about 50% the Dominion Engineering Works capacity to handle large hydraulic turbine contracts.

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WRITE FOR GENERAL BULLETIN NO. 201 ON DOMINION HYDRAULIC TURBINES

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What Is New In Europe

A 1953 REPORT ON TECHNICAL PROGRESS

By Walter F. Holzer, B.A., Ph. D.

Assistant to Vice President in Charge of Manufacturing, Crown Zellerbach Corp.

(Based on observations during a European tour, particularly in Scandinavia. Actually most references are to new developments in Sweden).

MOST REVOLUTIONARY ADVANCE in the digester room is the introduction of a continuous kraft digester (in Sweden). A 30 ton/24 hour pilot plant is now in successful operation, and several units up to 60 tons/24 hours are in production in Europe. It is a little too early to evaluate the success, but reports continue favorable. Many ingenious developments have made this step possible. Claims made for the equipment are reasonable, and undoubtedly are justified by performance. Some of these are:

1. Better heat economy with steam usage for cooking and washing ranging from 0.9-1.3 pounds of steam per pound of pulp. The higher figure is caused by wet wood.
2. Continuous steam demand rather than extreme peaks imposed by batch cooking.
3. More uniform pulp quality as opposed to variations from batch to batch. Also less screenings.
4. Less building required per ton of production.
5. Probably less corrosion in the digester due to uniform condition at any one spot in the system.

Several new designs of screens are in use. All of these are of the slot type with vibrating plates. One is similar to flat screens in construction, but has stock flowing up through the plate with rejects falling away. Two others are of drum construction with stock flowing inwardly, and rejects being discarded continuously. With few exceptions these screens are being used after bleaching, and the round hole centrifugal screens being retained after the universally used Jonsson knotters. The explanation given for this arrangement was that the round hole in centrifugal screens was most efficient in discarding shives while the slotted screen was most efficient in separating speck-type dirt. The Scandinavian industry is plagued with shives from uncooked wood in the cambial layer caused by tannins soaked in from the bark during flotation. This double screening removes all types of dirt most efficiently and delivers a clean pulp.

The recovery rooms in many kraft mills are being completely rebuilt with spray-type furnaces and recovery boilers, and continuous causticizing systems. Lime kilns for reburning lime mud are still scarce, but some mills are making the installation.

With little or no possibility of increasing income from expanded production, progress is being made through upgrading the product, or converting through one or more additional steps.

WALTER F. HOLZER, who wrote this report on process progress in Europe.

Many sulfite mills have developed lines of purified pulps for use in rayon, acetate, nitrate, or other cellulose derivatives. Bleach plants are well equipped to produce any level of alpha cellulose content desired up to and including 98-99 percent. Of course any alpha above 95-96 percent is obtained by a cold caustic-steep stage. In kraft mills more and more bleach plants capable of producing pulps with brightnesses of 85 GE or higher are being added.

Most notable advance is the introduction of chlorine dioxide which is capable of producing pulps in the brightness range of 92. Use of this chemical is limited in Sweden to three mills because of use patents. Several other mills are prepared to enter the field as soon as the patents expire in less than two years. The use of this chemical is expensive, but the production of a premium pulp and the remarkable dirt-bleaching ability of the process are considered sufficient justification. Principal problems in connection with its use are the explosive nature of the gas, and the extreme corrosiveness of the solution. The former is largely controlled by properly designed equipment, but the latter is still causing considerable trouble.

Further ways of upgrading products have been to convert pulp to paper, and in some cases to produce converted paper products such as bags, napkins, toilet tissue, etc. There do not seem to be any mechanical developments in these fields that are not familiar to the industry on this continent. Installations of this type, however, embody the newest devices, and there are some indications that movement in this direction will accelerate.

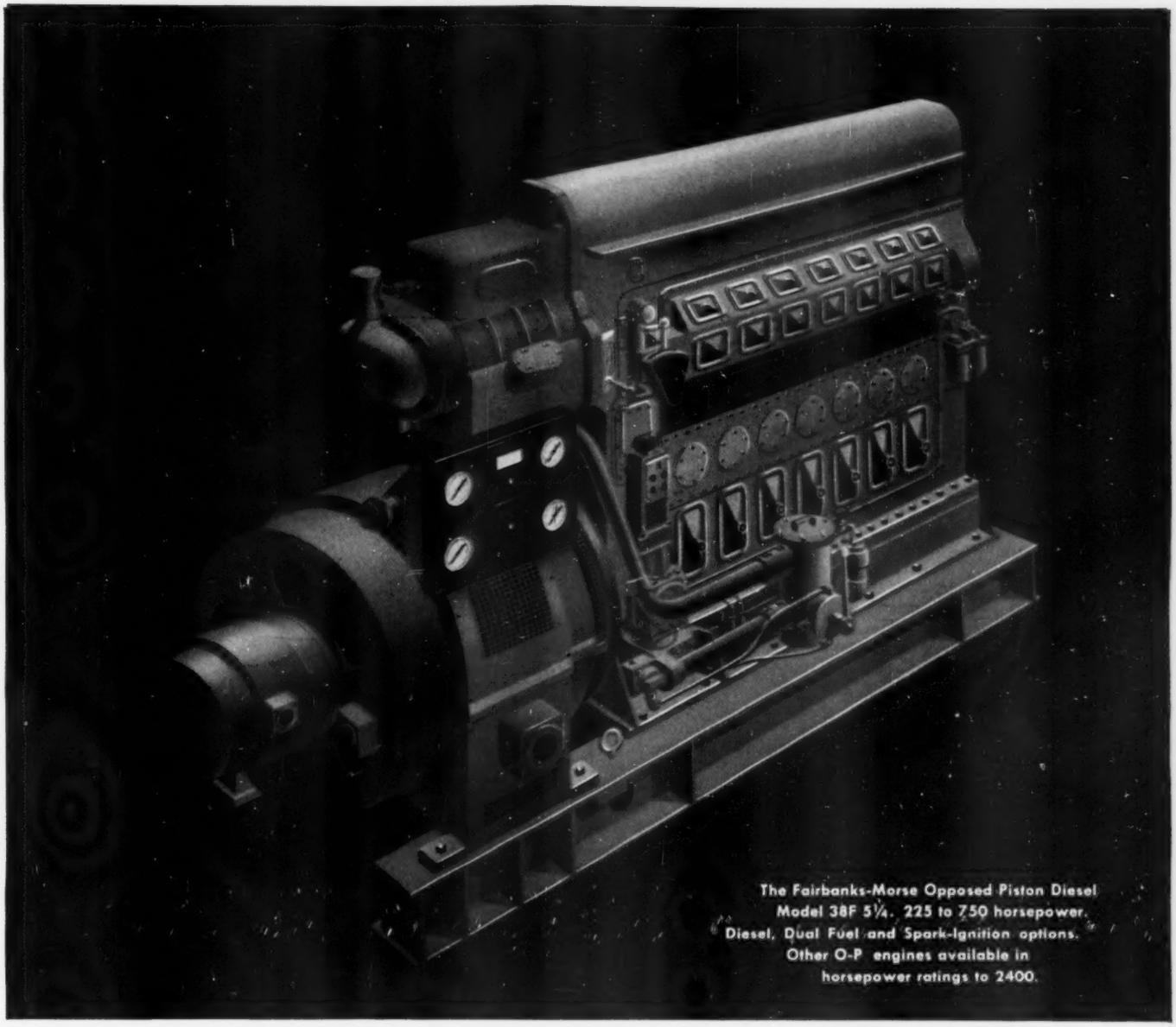
Cost of steam, especially in Scandinavia, depending on the reference used, is one and one-half to three times as expensive as on this continent. All coal and oil must be imported at considerable expense, and the resulting price of steam forces rigid economy in use of heat as well as extensive programs to recover low potential waste heat.

Heat exchangers are widely used on all hot effluents and on products having a highly heated step. Most commonly used is the plate type. One new design has specially formed plates that can be added or removed from a frame like the leaves of a filter press, and thus within the limits of the frame change the capacity. This exchanger is also readily disassembled for cleaning.

Mills are introducing turbines as vacuum pumps. The installations are somewhat complicated since all water must be carefully trapped before the air goes to the turbine. On the other hand, the turbine can deliver air at elevated temperatures (50-150° C.) so that it is useful in the ventilating systems around pulp or paper driers. By taking credit for the heat, it is claimed that up to 85 percent of the power consumed is recovered in useful form. In one installation a mill collects hot water, not usable at low potential, in a well on which a nine stage turbine run by a 1000 hp motor pulls a vacuum. The low potential heat is extracted by boiling the water at the low pressure, and the turbine compresses the vapor to 30 pound saturated steam at a fraction of the cost of boiler steam.

Heat is also recovered by evaporation and burning of spent sulfite liquor. The liquor after extraction of sugars by alcohol fermentation is being concentrated in multiple effect evaporators, most commonly of the reverse flow type, and burned in suspension after atomization. The problems in this development have been difficult, but the reversing type evaporator, that removes scale from the calcium liquor when the steam and liquor are reversed, seems now to be a commercial success. This, of course, means construction of two complete effects per stage of evaporation, and, since the best stainless steels are needed, the evaporators are extremely expensive. Such an installation can support itself only when steam costs are very high. Burning of liquor at 55-60 percent solids is best done in a ceramic-lined preburner in which temperatures of 2000° F. or more can be maintained. The principal unsolved problem in this connection is the disposal of calcium fly ash. As long as burning of sulfite liquor is on a relatively small scale the ash is not too serious a nuisance. This danger, however, has probably been the principal deterrent to more rapid expansion of this practice.

A procedure in almost universal use to reduce cooking steam is that of chip-



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packing. Since the amount of steam used per cook is essentially a constant for a given digester regardless of the amount of pulp produced, the more pulp per cook, the less will be the steam per ton of pulp. By use of steam packers the pulp per cook has been increased in various mills from 20 to 40 percent. In highest degree of packing yields of 6.5 pounds of stock per cubic foot of digester volume are obtained. The question of discharging the pulp is no problem since it is not blown, but washed in the digester after relieving pressure to zero and then dumped by means of high pressure water hoses.

Utilization of Wastes

The utilization of several wastes has been discussed many times. This refers to the use of thinnings from even ten-year-old stands of trees as well as subsequent thinning below full commercial-size logs in order to recover full growth capacity of the soil. It further refers to the evaporation and burning of spent sulfite liquor to recover fuel value.

As a further example, the almost universal practice of recovering alcohol from spent sulfite liquor may be cited. This can be an advantageous process since there is no competition from cheap alcohol from waste molasses or from ethylene by catalytic reaction. During World War II nearly every sulfite mill built an alcohol plant with government subsidy, and now is running it because the demand for alcohol is high.

The process is standard in most cases and consists of yeast fermentation under anaerobic conditions followed by distillation, rectification and purification of the alcohol. The variation in the process enters with the ingenuity of the engineers in using and reusing the heat. Most distilleries are run from waste heat from a previous process, and many finally recover even the latent heat of vaporization by using the condensing alcohol to heat the final purification still.

Several of the larger mills have initiated an extensive chemical manufacturing industry based on alcohol as a raw material, and produce such products as acetone, acetic acid, esters, glycols, amines, and the like.

The kraft mills which use mostly pine collect the tall oil from their black liquor and sell it to refiners who prepare various rosin derivatives. Turpentine from digester blow gases is frequently recovered and purified for use in paints.

Research in Pulp and Paper

Limited resources have probably encouraged intensive and fundamental research in Europe some years earlier than it developed on this continent. The need for more complete and efficient utilization of resources made establishment of large research centers desirable. Nearly every country has such a center sponsored by the government, by the industry as a whole, or jointly by the two. In addition to such centers the larger mills support large, well-equipped research departments. In all cases vigorous programs were under way. The problems are dictated by the needs of the industry and many of the problems could be pointed out from the discussion above.

Since much of the industry produces market pulp, several laboratories were doing extensive work on pulp testing methods and equipment, and standardization of such tests. Referee pulp testing also was a major item of work.

Limited raw material makes it imperative that the greatest amount of pulp be produced from what material is available. This has been reflected in numerous programs on high yield pulps. Methods included modification of commercial processes, use of multiple stage cooking, and use of neutral sulfite. In several cases the program was either in commercial production or in the construction stage with production expected in a matter of months. One of the most interesting features of this work was that the product was generally intended for paper, not board, and that yields were in the range of 55-60 percent.

The expansion of the market for pulps for chemical conversion has stimulated research on the carbohydrates in pulp and the removal of the various non-cellulosic fractions in the various steps of bleaching and refining. The use of paper chromatographic methods to follow the various sugars was almost universal, and considered a most important and powerful tool.

The bleaching process itself is receiving much attention. The improvement of brightness with minimum pulp degradation, least loss in yield, and good chemical and heat economy is a continuous program. In recent years chlorine dioxide has opened a new field and has become an integral part of the picture so far as the laboratory is concerned.

The desire to use the minimum weight of paper where strength is concerned has created interest in the physical properties of paper. New methods of testing are being evolved, and the most active field is that of stress-strain. The ability of a sheet to absorb a shock through internal adjustments is often more important than sheer strength, and in most uses the paper with good visco-elastic properties is preferred. The application of some of these principles, first developed in the textile field, to paper has been an outstanding contribution.

New Mill Building At Burnie, Tasmania

Work has been started on a new two-machine mill which will adjoin the Thomas Owen & Co. (Australia) Ltd.'s operation at Burnie, on the north coast of Tasmania overlooking the Bass Strait. The company is an associate of Associated Pulp & Paper Mills Ltd.

It was intended that a new mill would be constructed at Geelong, Victoria, on the Australian mainland, but owing to difficulties APPM decided to proceed at Burnie.

The machines by Bertrams (England) will have a capacity of 35 to 40 tons per day of fine papers. Possible top speed of 1000 fpm is provided.

Juneau, Alaska, Mill Planners Granted Tax Exemption

Georgia-Pacific Plywood Co., Juneau, Alaska, received 40 percent quick tax writeoff allowance in an Office of Defense Mobilization certificate of necessity issued to it for a proposed $54,174,090 newsprint mill at Juneau. It was allowed the write-off for only a five year period, shorter than customary.

O. R. Cheatam, president of Georgia Pacific, said the newsprint mill is in "a long range planning stage." He said the company asked for 65 percent tax write-off. It plans to bid for a 50 year supply of Forest Service timber from its Juneau "pulpwood allotment," which must be sold at auction, for annual production of 98,-000 tons of newsprint at the outset.

Newsprint from Bagasse Made In India

Newsprint made from sugar cane bagasse has been used successfully for the first time in India. A British-owned newspaper, *The Statesman*, published in New Delhi, was printed on it for one edition.

More than 1,500,000 tons of bagasse is available annually in India and most is used for fuel. The new NEPA operation at Chadni, owned by National Newsprint & Paper Mills Ltd., to produce about 30,-000 tons a year, has a machine, 226 inches, built by Pusey & Jones Corp.

Company Formed To Build in Newfoundland

British financial and industrial interests have formed British Newfoundland Corp. to develop the timber and other resources of Newfoundland not at present being exploited by groups such as Bowater's Newfoundland Pulp & Paper Mills and Anglo-Newfoundland Development Co.

The corporation is a sequel to Newfoundland & Labrador Corp. established two years ago by Canadian and U.S. groups cooperating with the Newfoundland government, although the two companies will operate independently. Between them they hold timber rights to 6,400 square miles in Newfoundland and Labrador.

It is understood that construction of pulp mills is the ultimate objective of the companies, although action will probably be held in abeyance. Total recorded timber stand is over 39 million cords, mostly black spruce and balsam.

Fifth Black-Clawson Machine for Schweitzer

The Black-Clawson Co. has received contracts from Peter J. Schweitzer Co. to build another precision Fourdrinier tissue machine for their Spotswood, N.J., mill.

This machine will be extremely high precision to produce cigaret and condenser tissues as thin as .0003 in. thick, maximum tolerance of .00005 in. It will be the fifth such machine built for Schweitzer by Black-Clawson.

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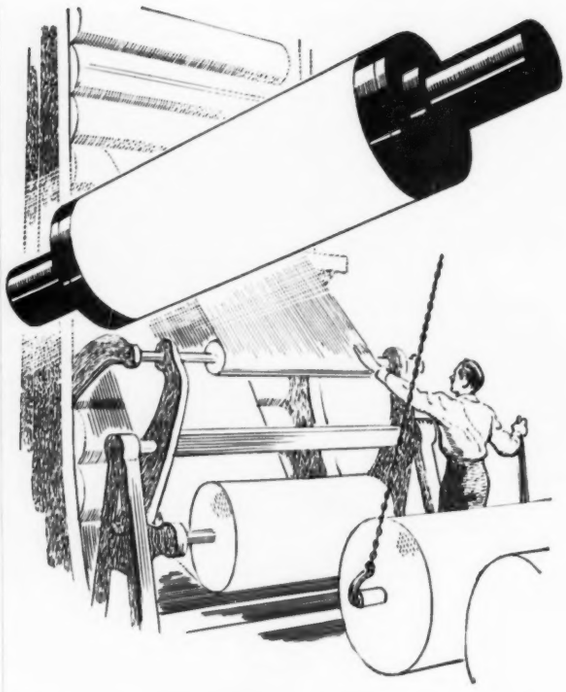

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CALENDER ROLLS

REPORT ON EUROPEAN TRIP

EXAMPLE OF NEW EQUIPMENT: A NEW TENSILE TESTER

By Lionel Sutherland

Treasurer, Sutherland Refiner Corp., Trenton, N. J.

ALTHOUGH MY EUROPEAN trip was primarily on business, I did have an opportunity to visit a number of tourist attractions. My wife, who accompanied me, visited many places of interest in and around London, Paris, Rome and Copenhagen and thoroughly enjoyed her experiences because it was her first trip to the Continent.

One thing that impressed me was the number of people who spoke English. Enroute from Nice to Turin the train was late for a connection, and I had to go on to Genoa and catch a later train. The train conductor spoke no English, and I don't speak Italian so it was a tie broken by a Swiss gentleman who spoke six languages. But more about just the "living" side of our trip later.

LON SUTHERLAND — a report especially written for PULP & PAPER readers.

A New Tensile Tester

One of the more interesting technical sides of the visit was the dynamic tensile tester which I saw in the laboratories of the Albert E. Reed Co., one of the leading British paper manufacturers, with five mills and over 20 machines.

Although it is relatively new, they believe that use of this instrument will give some interesting data on the quality and performance of paper. Another thing in Europe is the fact that they have a high regard for the mullen test, which, of course is losing a considerable amount of its value in the United States. Apparently customers insist on the mullen test, although the mills would prefer to use other tests as being more indicative of paper quality.

The Reed Co., whose biggest mill is at Aylesford, Kent, has developed a laboratory beater known as the Aylesford beater, which does a remarkably good job of correlating the results obtained with the laboratory beater, and those subsequently obtained on the paper machine using the same pulps. They are also able to predict the performance of blends of pulps by having separately beaten components of the furnish and taking into account the percentage of each pulp in the machine furnish. In most cases the results were within one percent.

Comparisons of Mills

In many respects the relatively few European Continental mills I visited, and I am speaking exclusively of the Continent, are backward by our standards. However, the Kaukopaa and Kotka mills of the Enso-Gutzeit Co. in Finland have very modern and up-to-date machine rooms. My past comparable experience is primarily with our modern Southern mills.

In general, the European Continental mills are quite small and most of them do not have the facilities for research and development which many of our mills possess. As a result of wars and the high cost of capital and capital equipment, these mills have not been able to keep up-to-date and modernize as much as they would like.

Relative absence of integrated operation is quite an item in keeping their costs at a high level despite the low labor rates which in turn minimize the advantages to be gained from further mechanization. As a result of old equipment and cheap labor there were many material handling operations that would not be feasible over here.

They do not have collectors of waste papers as we do, who subsequently clean, grade and pack, so mills generally buy the paper as it comes and do their own grading and sorting. One mill in Milan takes all the waste paper from the city and has an extensive cleaning and sorting plant, which is operated in connection with their mill.

Many mills, particularly in England, are dependent on Scandinavia for pulp. Interesting on the Continent were the number of mills with combination Fourdrinier and cylinder wet ends, used together or separately.

In Italy, it is uncommonly difficult to discharge an unsatisfactory employe and the regulations permit them to hold onto jobs until they are 70 or 75 years old. And a percentage of war disabled must be employed.

One mill in France makes a bright hardwood pulp from chips previously used for tannin extraction. France and Italy are getting wood from Yugoslavia and the Alps and esparto from North Africa.

The Thames Board Mills and Bowater's Mersey mill were other large operations I visited in England. Pulp, paper and wood products in Finland provide one-third of all employment and this country is making more paper for export.

Naturally, on a trip like mine it is difficult to get enough coverage of a large industry. It was a valuable experience, especially contacts with our friends. I found them very wonderful hosts.

The Necessities of Life

Getting back to the lighter side:

The food situation in England was better than we had been led to expect. In the hotels and restaurants you could order almost anything. Fish and game were readily available, although roast beef and steaks were not usually on the menu. However, in the homes, rationing hit pretty hard.

In the rest of Europe, food supplies seemed to be very adequate with steaks and other delicacies available in the hotels and restaurants. Prices, however, were rather high in most places even compared to U. S. prices.

French cooking lived up to its reputation. The service was superb throughout the trip, and meals were consumed in a more leisurely manner than usually in the U.S. I had an interesting visit to a wine cave in Turkheim, France.

Probably the most difficult part of the trip was the currency exchange problem. The hardest currency to grasp, I believe, is the pounds, shillings and pence in England. Changes to French francs, Italian lire Swiss francs, Dutch guilders and Finn marks were disconcerting.

Canadians Operate New Zealand Mill

Many Canadians are on the staff of N.Z. Forest Products, whose big expansion is now fully under way at Tokoroa, North Island, New Zealand. D. L. Stacey, manager of the mill, is a New Zealander, but he put in 18 months for background and training at MacMillan & Bloedel's unbleached kraft mill at Port Alberni, B.C.

Canadians in key jobs at the mill include Geoffrey C. Norman, J. F. Sanders, W. F. de Boeck, K. E. J. Durocher, L. A. Durocher, E. J. Connerly and W. W. McLaughlin, who used to be at the Harmac mill of MacMillan & Bloedel; L. F. Read of Vancouver; W. Bigrigg of Port Alberni and W. Watson, of Langley Prairie, B.C. They are working on four-year contracts, but the company hopes they will stay permanently. Each is provided with a house and when they arrived in Auckland they were taken to a furniture store and told to order what they wanted.

Pulp Consumers Schedule

The Association of Pulp Consumers has scheduled three regional meetings for its membership: Oct. 6—Fort Orange Club, Albany, N. Y., for New York State and New England members; Oct. 8—Union League Club, Philadelphia, Pa., for Middle Atlantic States companies; and week of Oct. 12—Middletown, O., for Central States.

The groups will meet for lunch, then will follow with a round table discussion after executive secretary, Reed Porter, has outlined current trends.

SONOCO, A PIONEER IN SOUTH

VISIT TO HARTSVILLE, S.C., BRINGS RECORD UP TO DATE

ORIGINALLY PROJECTED in 1899 to serve the South's textile industry, Sonoco Products Co., Hartsville, S.C., has been emerging over the years as a complex but related operation producing specialized products in total volume elevating it to major classification.

Of special interest to the industry today is Sonoco's pioneering enterprise in developing paper products in the construction field, already a factor in the company's sales promotion program.

This expansion of field is not being affected at the expense of the company's textile interests, for if anything the wide variety in shapes and sizes of cones, spools, tubes, etc., furnished to spinners of cotton, rayon, other yarns, is greater than ever before and amply supplied through a converting plant drawing on a paper mill producing about 500 tons daily of paper and board.

As an old producing mill, Sonoco is part and parcel of the community, participating freely in its economic and social life in the measure enjoyed so fully by progressive industries. It is based, not tied, to its position in local history, with which the company has kept pace. Both Sonoco and Hartsville have grown with time; kept modern.

Replacement Program

Sonoco's policy has been to effect maintenance replacements or add new features to its cylinder machines annually on a rotation serving to prevent them from lapsing into obsolescence. The program is made to conform to available funds budgeted ahead for the period. For instance a new Cameron winder was installed on No. 7 machine in 1950, on No. 5 machine in 1951, on No. 3 machine in 1952, and on No. 6 machine in 1953.

Similarly a new General Electric M.G. set was installed on No. 3 machine drive, a new dryer drainage on No. 4 machine, and a No. 2 Miami jordan added to equipment in 1952. In that year the company's crews installed a Stamm moisture control and a dryer drainage system on No. 3 machine. The improved dryer drainage system raised the temperatures of the dryers by an average of 16 degrees and its production by ten percent.

Over the same period (1950-1953) the company's program embraced addition of nine dryers on No. 1 machine and nine on No. 3 machine. No. 4 machine received a third deck of 20 castiron 150 lb. steam pressure dryers made for the mill by Downingtown Mfg. Co. A Stamm moisture control and an improved dryer drainage system were also installed.

A special feature added to No. 3 machine in 1952 (and booked for No. 1 this year) was a caliper control for the sheet. This is a product of Electric Eye Equipment Co., Danville, Ill. One control instrument is placed on each side of the sheet—not too close to the edge—as it passes over the first dryer roll. The instrument is set for the thickness of sheet desired. It will pass a small amount of variation, perhaps up to ten feet, and then, if too thin, increase, or too thick, decrease, stock to the machine by automatic action. The same double instrument checks level across the sheet.

In 1953 a Miami No. 2 jordan will be added to No. 5 machine. Also Falk angle drives will replace the present drives on No. 5 machine.

The most recently installed cylinder machine is No. 9. It was decided on Dec. 1, 1950, to initiate this project. An impeding structure was razed, a building erected, machine parts acquired and some made, assembled and erected so that the machine was producing cone paper on April 1, 1951. The speed with which this project was completed is a tribute to P. L. McCall, superintendent of the corrugating division, who supervised the erection of the machine; R. B. White, paper mill superintendent, and his assistant, J. L. Lanford; P. C. Coggeshall, chief purchasing agent; and members of Sonoco's engineering department, headed by R. G. Coker, vice-president i/c engineering and company secretary.

Since the mill produces a range of specialty items it is their custom to erect a mill-assembled machine, using their own paper mill men and engineers to provide guidance and to acquire or have made various parts selected for use. All of the eight cylinder machines were built in this manner. All of the machines with the exception of No. 3 have hoods furnished by J. O. Ross Engineering Co. The hood for No. 3 was by Industrial Air.

The newest machine has four cylinders 36 inches in diameter and 130 inches wide. The wet end is conventional. The vats were fabricated to mill design, the task being to level and square the sheet in an inadequate space compared to normal. While the wet end was designed by the mill, the balance of the machine is Downington with 37 second hand 42 in. dryers. The drainage system was furnished by Midwest-Fulton Machine Co. All pumps installed were new, either from Shartle or Goulds. The machine produces 45 tons of cone paper per 24 hours.

In 1951 the mill installed a Waco filter to serve the cylinder machines, one of the first ten in the United States. A next important step, taken this year, was the construction of a 200,000 gal. reservoir to serve as a surge tank for white water. While this is outfitted with drags to collect fibers that settle out, this operation is purely incidental inasmuch as the Waco filter will recover material remaining in the surplus water that is to be discharged to the creek.

The Hydropulpers create peak water demands when operating and the collection of all white water in the surge tank reduces new water required. The reservoir was designed by and its construction (completed August) supervised by the engineering department.

The Semi-Chemical Operation

In the papermaking side, Sonoco has a dual personality—one "the paper mill"

TOP LEFT: VIEW OF GENERAL OFFICES of Sonoco Products Co., of South Carolina, with new added section at left. TOP RIGHT: A closeup of the new addition at the other end of the building. President James L. Coker, whose grandfather, a disabled Civil War veteran, founded the company back in 1899, has his office in near lower floor corner.

BELOW LEFT: A DORR CLARIFIER, 50 ft. in diameter, 10 ft. effective depth, is used as a fiber saver in connection with No. 8 Fourdrinier paper machine. It has proven highly effective.

BELOW RIGHT: THIS IS THE NEW CAFETERIA built for Sonoco employes at Hartsville, and considered a most modern and excellent institution of its type.

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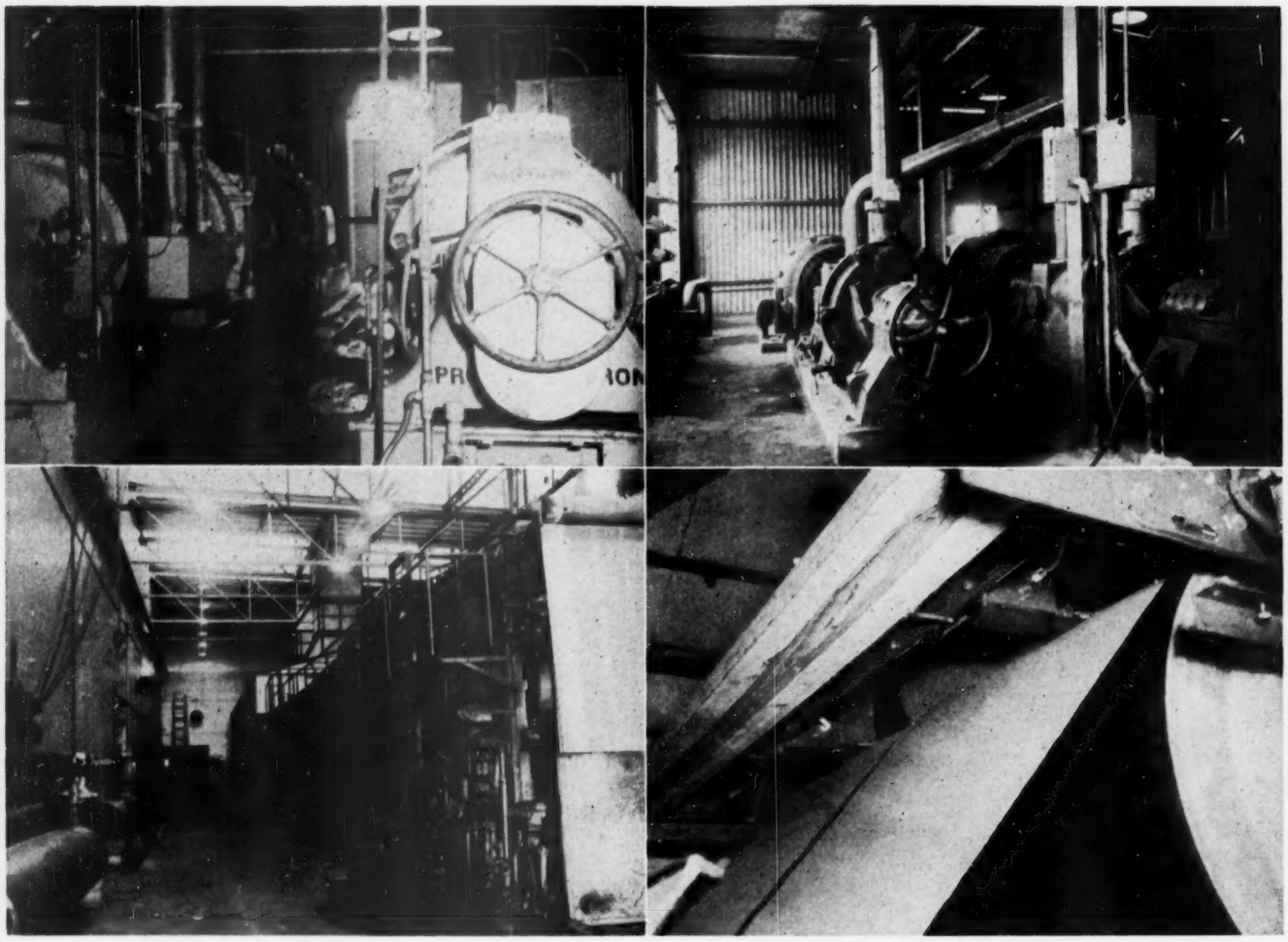


TOP LEFT—SPROUT-WALDRON REFINER at left is newest of five of these refiners serving the Neutral Sulfite Semi-Chemical Pulp Mill of Sonoco Products Co., Hartsville, S. C. Three are for primary refining, two for secondary.

TOP RIGHT—LAST STEP FOR SEMI-CHEM pulp at Sonoco before machine is battery of four SHARTLE BROS. Miami Jordans. Here is newest of two added for capacity increase, in building addition.

LOWER LEFT—NO. 9 DOWNINGTOWN MACHINE, newest machine in Sonoco Mill, is 130 inches wide. It has four cylinders and vats. The dryer section is served by Midwest Fulton drainage.

LOWER RIGHT—ELECTRIC EYE EQUIPMENT CO. mechanical device is shown here in use on Sonoco's No. 3 machine, a cylinder machine, for controlling thickness of its sheet.

with its eight cylinder machines; the other, the No. 8 machine, a 126 in. Fourdrinier installation producing 130 tons daily, backed by a 125-ton semi-chemical pulp mill utilizing mostly gum wood. The mill personnel think of the two distinct identities because the Fourdrinier and all involved with it was installed under contract with two Midwest converters. Entirely separate accounts are kept, but it is not to be inferred that No. 8 is permitted to lag, because in fact this particular phase of company activity has been kept at top efficiency.

For instance the two 8x16 Oliver United Filter Co. brown stock washers have been rejuvenated by replacing original drum and vat with stainless steel; the pulp mill has received one Sprout-Waldron Co. refiner, added to original installations to make five Sprout-Waldrons (3 for primary and two for secondary refining); a new 96-inch 10-knife Carthage chipper with unusually long (27-inch) knives and unusually large (24½-inch) spout installed; a Chain Belt Co. bark screen set between the pulpwood flume and the creek; a Reese Mfg. Co., San Francisco, 45x45 foot waste burner provided to dispose of bark.

The only Southern mill now making semi-chemical pulp by neutral sulfite process, Sonoco has built its own rotary sulfur burner with combustion chamber and two absorption towers. Four Biggs rotary digesters precede the washers and refiners. These are followed by four Shartle Miami No. 2 jordans. Two were recently added.

The need of increased refining capacity in both pulp and paper mill was brought about by installation of an additional section of 16 dryer rolls to the Fourdrinier machine. The original dryers take 35 lbs. back pressure steam from the No. 3 generator. The 16 new dryers take 150 lbs. steam, eight being Lukenweld and eight being castiron dryers by Downingtown. The installation of the additional and higher temperature drying capacity resulted in increased production of about 30 percent—100 to 130 tons on 9-point board.

The 1953 improvement program has included for No. 8 machine a Rotareaed Deculator (in operation in August); and a 50-foot diameter 10-foot effective depth Dorr clarifier (capacity design 400 gpm) that started April 1. The clarifier functions as a saveall, receiving all white water from No. 8. Fiber is returned to stock. Early efficiency tests showed a rating of from 95 to 99 percent. Company records show a recovery of 60,000 lbs. of fiber monthly. Water is returned to the system, but surplus to the creek.

Power and Electrical Additions

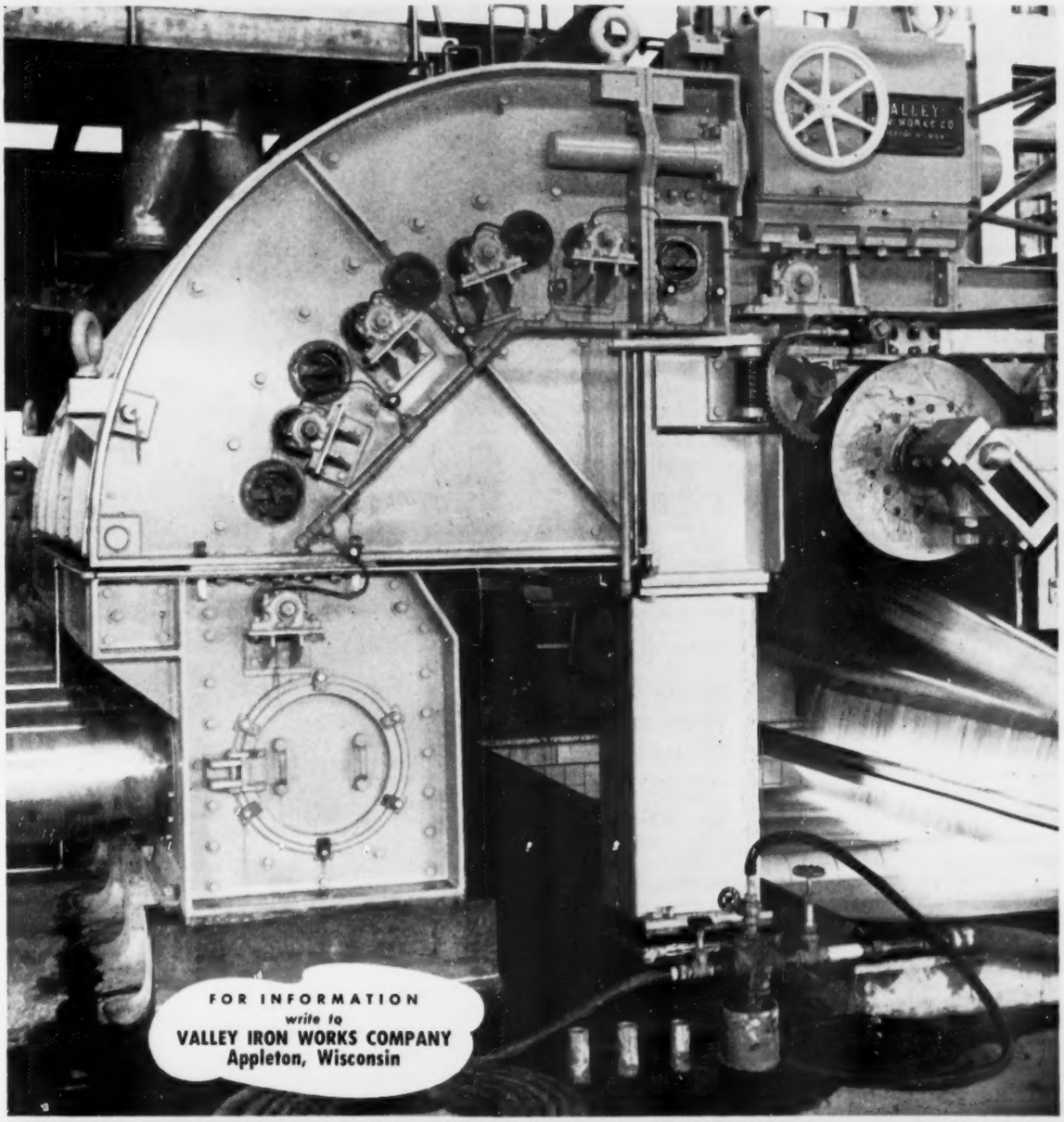
Basic improvements serving as forerunners of the 1950-53 modernization started with a new semi-outdoor Babcock & Wilcox pulverized coal and oil burning boiler in early 1950. This unit has a rating of 125,000 lbs., 365 lbs. pressure, 650-F with super-heater. The stack is self-supporting, having no guy wires.

This was followed by installation of a new No. 3—10,000 kw, 12,500 kva, 13,200 V non-automatic extraction General Electric turbo generator using 365 lbs. pressure at 650 degrees. The 35 lbs. back pressure is used as process steam. The plant's 440 volt electric distribution system was replaced with one for the higher voltage and transformer sub-stations placed at central distribution points.

A new 15-car paper loading and unloading dock was built to expedite handling of waste paper, using lift trucks.

Housekeeping is emphasized at Sonoco. It has a Dempster-Dumpster (Dempster

VALLEY PRESSURE INLETS



HERE IT IS! VALLEY'S LATEST PRESSURE PRIMARY – SUCCESSFULLY HARNESSING FAN PUMP PRESSURE TO SET NEW PERFORMANCE STANDARDS

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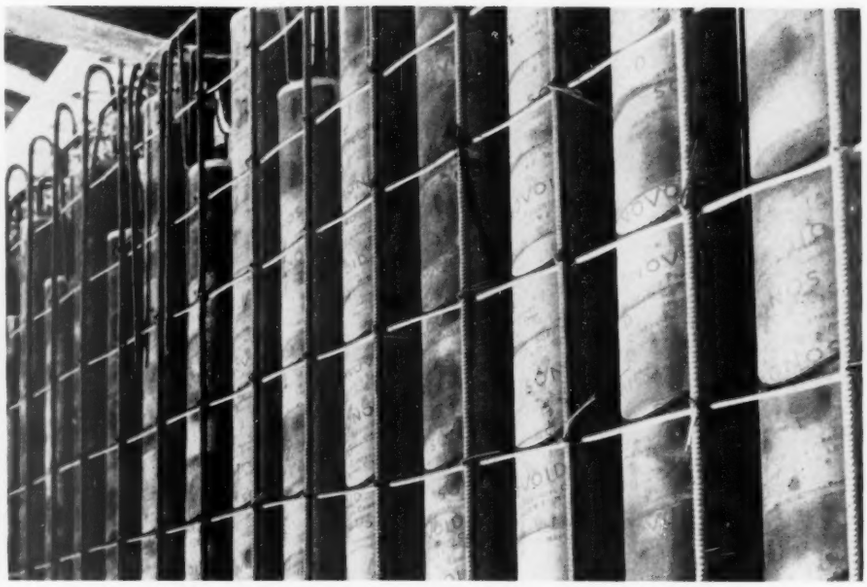

SONOVOID—paper fiber tube products of Sonoco Products Inc., used in construction. They are very light in weight. Here tubes are ready for concrete pouring. They reduce weight otherwise involved in solidly poured concrete, saving concrete and reducing steel cost.

Bros., Knoxville, Tenn.) system for efficient accumulation and disposal of trash. Contributory to good housekeeping is the committee whose monthly tour of inspection determines what department will hold the "President's Trophy" for excellence in appearance.

Coincident with and part and parcel of housekeeping is the new salvage department. Everything not in use is sent here. It has a one-story building fitted with racks and bins, a cyclone fence enclosed paved yard for weatherproof movable articles, and a third paved territory for extra heavy weatherproof items. Unusable scrap is sorted for metal and weight to meet classification grades, resulting in maximum return in volume sales. Brass and copper, shavings from machine shop, all are carefully graded for profitable sale. Serviceable items are requisitioned back into service; and many items of improbable use by the mill (pulleys, etc.) are sold to outside users whose knowledge of availability is derived through contact with mill personnel.

Community-Employe Facilities

In Hartsville's center, the 250-acre lake created by the mill dam provides endless recreation for the community. It has five lakeside clubs—Coker College, community, a private club, one for employes of the mill, and a club for Negroes. The dam provides for two 250 hp. each hydro-generators that are of particular service during down-time of the mill's steam power generating equipment.

The management's personnel program is widespread both outside and inside the mill grounds. The 1952-53 program has been to rebuild all wash rooms, to provide high standard accommodations for all workers. Recently completed was an extension of the personnel building to provide adequate space for a medical department, meeting rooms, offices, and a cafeteria of 150 seating capacity.

The main office building was enlarged. Air conditioning is provided in the cafeteria, main office and personnel office buildings and supervisory offices throughout the mill. The machine shop, one of the finest in the South, was air-conditioned when it was constructed in 1947.

The deep interest felt by Sonoco management in the community is being expressed in 1953 by the installation at considerable expense of a complete plant capacity ("pilot") 700 gpm mill effluent treatment unit to preserve the creek from pollution. The installation will accommodate effluent from both paper mill and the semi-chemical mill. Operation date has been set as Dec. 1953.

Wide Variety of Products

Originally Sonoco was devoted to the production of items for the textile trade but this has been extended to include also building construction, electrical, automotive and packaging. Also included in the range of products are paper cores for paper mill rolls, adding machine and other business paper cores, and spools; also cones for protection of anchor bolts during construction.

Sonoco's major invasion in the construction field has opened an entirely new line to the paper industry, and its efforts have been successful to the point of organizing a new sales force and promotion program for these products. They include:

Sonotubes—paper fiber tubes up to 36 inches inner diameter for concrete forms, particularly columns. The large size is the largest paper tube made.

Sonoairduct—paper fiber ducts for use in perimeter heating of basementless slab type constructed homes.

Sonovoid—paper fiber tubes used in concrete slab construction to lighten the weight by reducing the amount of concrete and steel by creating air spaces within the slab. This is an application for roof or deck slabs, bridge slabs, hangar construction under critical specifications of designing engineers and architects. They lighten construction sections so they can be precast and lifted into place by cranes. The tubes may be bent for arches. These tubes are produced in lengths up to 24 feet, but longer lengths may be manufactured on order.

A special new product is the *Sonoairduct XP*, a paper fiber duct used in "crawl" space, attic, or basement in the installation of warm air heating systems. These have a 16 lb. asbestos wrap outside and a foil inside. Being light they can be handled into place and do not have to be followed by insulation wrappers.

J. L. Coker is president of Sonoco; C. W. Coker is executive vice president; C. K. Dunlap, vice president; G. W. Blunt White, vice president i/c Northern operations; C. H. Campbell, vice president i/c sales; J. B. Gilbert, treasurer; and, J. H. Martin, production manager.

Pacific Coast Supply Plans to Terminate

Pacific Coast Supply Co., originally incorporated in 1919 as a wholly owned subsidiary of Crown Willamette Paper Co., will terminate its function as a sales agency of mill supplies and equipment on Dec. 31.

In its early years, Pacific Coast Supply successfully arranged for certain West Coast manufacturers to enter the pulp and paper mill supply field. One early account, California Cotton Mills, is still a major supplier of dryer felts.

Subsequently, Pacific Coast Supply became an active selling organization, providing coastwide representation and competent customer service for East and Midwest manufacturers. Offices are in Portland, Ore., and San Francisco, with six salesmen covering West Coast accounts.

With growth of the industry in the West, and development of an increasingly close liaison between manufacturers and customers, it became evident that the company has fulfilled its purpose.

W. C. Marshall, with the supply company since 1931, has succeeded John M. Fulton as manager, to serve until the end of the year. After Jan. 1, Mr. Marshall becomes Pacific Northwest representative of Calco Chemical Div., American Cyanamid Corp.

Man uses paper more than any other commodity except water. You are in an indispensable industry!

WILLIAM C. MARSHALL, Mgr., for Pacific Coast Supply Co. until year end, after which he becomes Pac. Coast Mgr. for Calco Chemical Division of American Cyanamid Co.

Marshall to Continue For Calco Chemical

When William C. Marshall concludes his duties as Pacific Coast Supply Co. manager, when that firm disbands Jan. 1, he will immediately assume the position of Pacific Northwest representative for the Calco Chemical Division of American Cyanamid Co., according to James L. Naylor, general manager of the dyestuff department, Calco Chemical Div.

He will headquarter in Portland, Ore., where Calco Chemical has warehouse and offices for its dyestuffs, pigments and intermediates for paper and textile industries. This is a return to the set-up which existed before Pacific Coast Supply was formed.

Jack Loomis, veteran head of paper sales for Calco Chemical for many years, will continue to visit Pacific Coast mills from time to time with Mr. Marshall.

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HARVEST FROM HAPPINESS

Prize Essay by E. P. Ingalls Jr., of Warren Mill

EVERETT P. INGALLS, JR., son and namesake of the manufacturing vice president of S. D. Warren Co., Cumberland Mills, Maine, was first prize winner of the 1953 essay contest on the general theme company obligations to employes conducted by John W. Bolton & Sons, Inc., of Lawrence, Mass., in collaboration with the Superintendents Association.

Young Mr. Ingalls entitled his entry, "*Harvest from Happiness,*" and in a personal, intimate vein, cited eight major things that he concluded a company should offer its employes. These were: (1) a good living wage, (2) job security, (3) an opportunity to advance, (4) good working conditions, (5) a chance to air grievances, (6) a chance to offer ideas for mutual benefit, (7) fringe benefits in line with other organizations, and (8) a pension or retirement plan.

A company which offers these, he wrote, "is fulfilling its obligations to its employes and will reap a harvest of maximum efficiency from dependable and satisfied workers."

There were $3,250 cash prizes divided among Mr. Ingalls, Charles F. Hill, Sorg Paper Co., second prize winner, J. H. Groves, Union Bag & Paper Corp., third prize winner, and ten divisional winners. The latter were R. H. Worrell of Southland Mills, Lloyd Beck, Mead Corp., Chillicothe, O.; A. T. Luey, Sutherland Paper; Wilfred Gallay, E. B. Eddy Co.; John A. McPherson, Mosinee Mills; A. L. M. Bixler, Riegel at Milford, N. J.; B. P. Wood, Strathmore Paper; W. E. Ryon, Jr., Ecusta Paper; Fred H. Milligan, Crown Zellerbach, just transferred from Camas to Ocean Falls, B. C.; and John E. Wilbur, like Mr. Ingalls from Cumberland Mills, but now with C.C.A. in Chicago.

Here are some interesting excerpts from the Ingalls prize winner:

"Anyone would recognize Larry (a backtender) as a guy who really likes what he's doing and is content with the world around him. I don't say that Larry doesn't have problems; he has two sons, two daughters, a small farm on the outskirts of town, and just like the next fellow, he and Mrs. O'Neil have the problems that go with raising a family and keeping a house today. But, as Larry, himself, has often said, 'As long as the mill runs, I'm doing all right.'

"When he made that comment the other day, in answer to my, 'How's tricks, Larry?', I led him along a little, asking him just what the mill was doing for him. . .

"The first thing he mentioned was his weekly paycheck. He was earning a *good living wage.* He could give his wife and four children the right kind of food and the clothes they needed. His boys could go to ball games and his girls, to dancing school. His wife could go in town and buy the things she wanted for their home. Larry, himself was buying a tractor for the farm.

"Then, he wanted *job security.* It meant a lot to Larry to know that his job was a steady job; that in bad times when the market was poor, he'd work just as many hours a week as the fellow in the mill across the river. He said that that was up to the company and beyond his control. . . 'All that I can do is make the best sheet of paper possible every hour I'm in there.' . .

"Another important point in Larry's mind was his *chance to advance,* his chance to be a machine tender. He was next in line from the standpoint of seniority and it appeared to him that with the 'spare running' he'd been doing, he wasn't being bypassed. . .

"Larry had thought about *good working conditions.* Here in the mill, the company gave him a pleasant and a safe place to work. The machine room was well lighted, well ventilated, and clean. All belts, gears, and moving pulleys were well guarded. The men he worked with were capable, cautious and not careless. Yes, he liked the crew he worked with. . . .

"There was an opportunity for Larry to *air his grievances,* though he'd only felt it necessary to take advantage of this privilege once in 19 years. That was when Johnny Adams came back from the service and got the next machine tender's job. 'I guess I just didn't understand the GI Bill,' Larry told me. . .

"Larry also had a *chance to offer his ideas* for the benefit of the company through the suggestion system. He had had three ideas that really 'hit the Jackpot.' The best one was the collapsible core which is being used now to wind soda rolls on. . .

"With the farm, time off was important too. The day the company granted a third week's vacation for employes who had been with the company 15 years was a happy day for Larry. He mentioned other so-called *fringe benefits.* . .

"As we walked down the road to where I'd left my car, Larry told me that he planned to retire at 65 and settle down to a quiet life of farming. 'I figure that with my *pension from the company,* my social security, and a little effort on the farm, I'll be all set. Yes sir, as long as the mill runs, I'm doing all right.'

"I drove away, thinking of our conversation, and realizing that Larry had given considerable thought to his relationship with his company. Were his wants typical? Would the pulp mill superintendent, the accountant in the main office, the boss's secretary, and the super salesman in the field all make the same demands of the company for which he or she works? . . . Would the company feel the same obligations to Jack, the salesman?

"Fundamentally, I believe the answer is 'yes.' Steady advancement, a good salary, and the assurance of a leisurely retirement; these represent the ultimate goals which Jack is striving for. . . . He wants to know that the only hurdle in his becoming district sales manager and eventually vice president in charge of Sales is his present lack of experience. . . ."

THE WINNER!

EVERETT P. INGALLS, Jr., winner of this year's Bolton award.

Everett P. Ingalls, Jr. was born in Niagara Falls, N.Y., on Sept. 21, 1921. He entered the University of Maine and graduated with a B.S. degree in Chem. Engr. in 1943. Following a short period with Celanese Corp. of America, he entered the Armed Forces in 1944 and after service in Europe was released as a First Lieutenant in Jan., 1947.

He entered the employ of the Warren company in March, 1947, and after a short apprentice course was assigned to the paper machine department where he became foreman of the machine-coating paper machines. At the present time, he is being transferred to the Central Division of S. D. Warren Co. at Muskegon, Mich., as assistant production manager.

On Dec. 25, 1943, Mr. Ingalls married Miss Joyce Iveny of Eastport, Maine, and they have three children, Everett Palmer, III, Keneth Robert, and Virginia Anne. His father is Everett P. Ingalls, vice president of S. D. Warren.

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News and Notes from ▣ ▣ ▣

EQUIPMENT AND SUPPLY COMPANIES

FISCHER & PORTER CO., of Hatboro, Pa., manufacturers of process control instruments, announces a new catalog, "An Introduction to Flowrator Meters" (F&P catalog 10-A-10). The catalog discusses Flowrator meters and presents objective comparisons between these variable-area types and variable-head meters. How the variable-area meter works, its basic flow equation, as well as information on calibration scales, metering range, permanent pressure loss, upstream piping effects, viscosity effects, purging, and pulsating flow, are all discussed. Also it has a description of F&P fabricating methods and facilities related to Flowrator meter production.

HANCHETT MFG. CO.'S new catalog, just off the press, is alphabetically indexed and divided into sections of equipment in related categories, to make all information easily accessible. This new catalog can be obtained by writing Hanchett Mfg. Co., Big Rapids, Mich., or the West Coast Branch, Macadam Ave., and Flower St., Portland, Ore.

ELECTRIC STEEL FOUNDRY CO., 2141 N-W 25th Ave., Portland 10, Ore., announces its stock of stainless fastenings has been steadily growing. Faster, more complete service, right from stock, is the type of service Esco is trying to provide, says Bill Henderson, of its High Alloys Division.

THE JOHNSON CORP., Three Rivers, Mich., has announced a new development to reduce the power requirements of rotary joints used on cylinder dryers. Called the Johnson Joint Automatic Load Compensator, this new device offers a means of counteracting pressure on the sealing member of the Johnson Joint, thus reducing friction load and increasing service life.

OWENS-CORNING FIBERGLAS CORP., Toledo, 1, Ohio, announces hydrous calcium silicate pipe and block insulations for high temperature ranges are being used in an increasing variety of industrial applications. Effective to temperatures of 1200° F., the pipe and block, known as Kaylo Heat Insulations, are used as industrial insulation for such equipment as autoclaves, boilers, breechings, chilling pits, condensers, dryers, evaporators, furnaces, heat exchangers, hot air ducts, kilns, precipitators, process systems, steam lines, tanks, towers, turbines, etc.

HERCULES POWDER CO., Wilmington, Del., has issued a booklet on the role of wax emulsions for paper sizing. Made and sold by Hercules, under the trade name "Paracol," these emulsions have been especially developed in Hercules paper-service laboratories to solve specific sizing problems.

CHANGES AT CHAIN BELT

A. R. ABELT (left), formerly Vice President in charge of Field Forces for Chain Belt Co., Milwaukee, is appointed Vice President—Sales. He will have executive responsibility for general sales policies, sales promotion and methods of distribution and marketing for all divisions.

GEORGE W. WOODLAND (middle), is appointed to newly created position of Manager of Field Forces for industrial divisions. He has the responsibility for directing and supervising the field forces and distributors for sprocket chains, power transmission machinery, conveying and process equipment.

GILBERT J. SCHUELKE (right), is Sales Manager of the Chain and Transmission Division. Formerly he was the Assistant Sales Manager of that division.

KOPPERS CO., Pittsburgh, announces appointment of Clinton H. Johnson as sales engineer in the Electrostatic Precipitator Dept., according to word from J. L. Tunstead, Gen. Sls. Mgr. of the company's Metal Products Div. Mr. Johnson joined Koppers in 1951 as a test engineer and has worked extensively on field testing of precipitators for fly ash, black liquor, blast furnace, and detarrer installations.

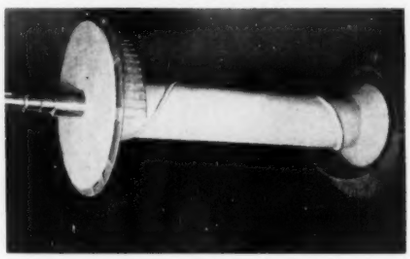
ALLIS CHALMERS has announced a new vertical paper stock pump which is described in a bulletin released by the company. It points out that the vertical design is inherently better able to handle heavy stock because the material flows into the eye of the impeller by gravity. Copies of Paper Stock Pump 52B7839 are available on request from Allis-Chalmers Mfg. Co., 995 S. 70th St., Milwaukee, Wis.

THEW SHOVEL CO., Lorain, Ohio, has released a new 12-page two-color bulletin, fully illustrated and describing the Lorain "80" Series of power shovels and cranes. These machines are in the 1¾-yd. class on shovels. The bulletin covers design and construction features with pictures of individual working parts.

HOOKER ELECTROCHEMICAL CO., announces that J. H. Babcock, formerly vice pres. in charge of development and research, has been named vice pres. and Dr. J. H. Bruun, formerly director of research, has been appointed director of research and development, according to R. L. Murray, pres. In his new position, Mr. Babcock, who has been with Hooker since 1916, will have greater responsibilities with respect to overall management of the company.

ALBANY FELT CO., of Canada, Ltd., is now embarking upon its first expansion program. Since 1952, when this modern $2,000,000 plant was built in Cowansville, Quebec, it has been manufacturing every size of paper maker's felt required by the pulp and paper industry. The company has ordered a new 600-in. Crompton & Knowles felt loom, the largest ever built for a Canadian mill; a giant custom-built Riggs & Lombard double-sided rotary fulling machine, and other equipment. The parent company, Albany Felt Co., Albany, N.Y., has been established in the United States since 1895 and is the largest manufacturer of paper machine felts in the world.

NEW PULP-MASTER ROTOR



MARK II ROTOR for E. D. Jones Pulp-Master is designed to improve circulation, and provide more rapid and complete defiberization.

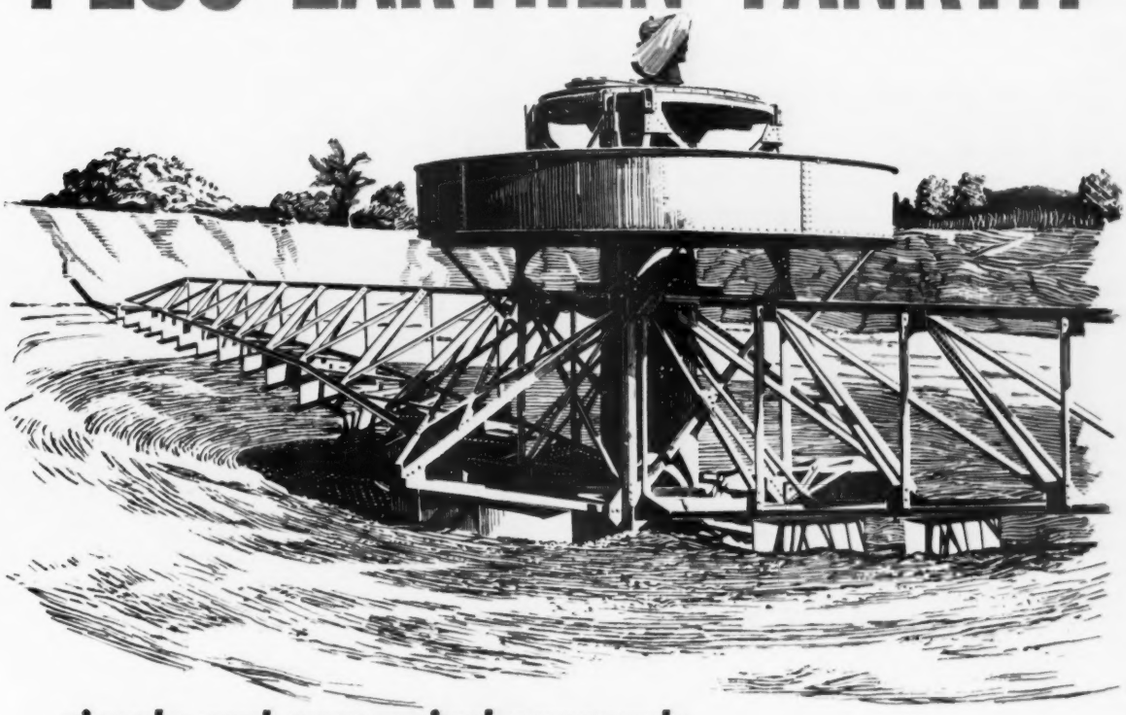
E. D. JONES & SONS CO., Pittsfield, Mass., announce development of a new Mark II rotor for their line of Pulp-Masters for stock preparation. The new rotor, which is available with new equipment or which may be installed in existing pulpers, is said to provide improved circulation, more rapid and complete defiberization of difficult broke and hard pulps, and with an actual reduction in horsepower hours per ton. Further details may be obtained by writing the company.

HYGROTESTER INC., Brooklyn, N.Y., has issued two new bulletins describing the Hygrotester moisture, basis-weight and thickness testing, recording and regulating instruments. This German-made equipment was first installed in the United States in 1953. Copies of bulletins may be obtained by writing the company at P.O. Box 923, Brooklyn 1, N.Y.

BABCOCK & WILCOX CO., tubular products division, Beaver Falls, Pa., has designed a data card to help individuals involved in design and operation of tubular equipment at elevated temperatures and pressures. Known as TDC 154, the data card tabulates maximum allowable stress values for a complete range of seamless and welded carbon, alloy and stainless steel tubing and pipe. Copies of card are free on request.

DORR CLARIFIER

PLUS EARTHEN TANK...



simple and economical approach to pulp mill waste treatment

If removal of settleable solids from large flows is your principal waste treatment worry, this is your combination for economy. A Dorr Clarifier installed in an earthen tank will give you substantial removals of suspended solids and effect reasonable BOD reduction as well — at a lower installed cost than any other available unit.

The principle of installing a Dorr mechanism in an oversized earthen basin has been thoroughly proven in sedimentation operations in many industries. And now . . . three Southeastern kraft mills are adapting it for waste treatment. These particular installations range in size from a 150′ dia. Clarifier installed in a 250′ dia. basin to a 300′ dia. unit installed in a 500′ dia. tank.

While the Dorr Clarifier-earthen basin team is suited principally for use as a primary treatment unit, it's a sound starting point for eventual complete biological treatment as well. Additional treatment steps can be added as needed, without affecting the initial Clarifier installation.

We'd be glad to talk to you or your engineers about the details of this low cost combination in terms of your own problem. No obligation, of course. Just write to The Dorr Company, Barry Place, Stamford, Conn.

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THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

Offices, Associated Companies or Representatives in principal cities of the world.

LINK-BELT CO., Chicago, Ill., has announced a new combination class H drag chain for operation in conveyor troughs, such as sawmill and papermill refuse conveyors and in any drag conveyor service. It consists of cast block-type center links alternating with heavy steel sidebars connected by large steel rivets.

BRISTOL CO., announces a new line of Free-Vane Electronic Controllers. The new instruments are part of the series 500 line, and are available as indicating or recording controllers for temperature, pressure, flow, liquid level, humidity and time program control. More information is given in bulletin B226 from The Bristol Co., Waterbury 20, Conn.

JOHN WALDRON CORP. announces a new "Reverse Roll Coater" in Bulletin No. 1004. Copies of this bulletin may be obtained by writing to John Waldron Corp., Box 791, New Brunswick, N.J.

A. O. SMITH CORP., Milwaukee, Wis., announces that its newly-designed line of AC and DC welders has been transferred by the Welding Products Div., from Milwaukee to expanded quarters at Elkhorn, Wis. New construction is underway to add another 16,000 sq. ft. to the Elkhorn plant.

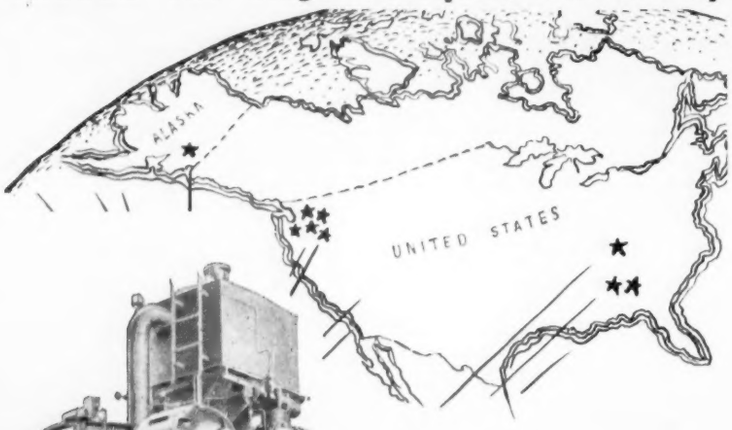
International Harvester Announces Power Units

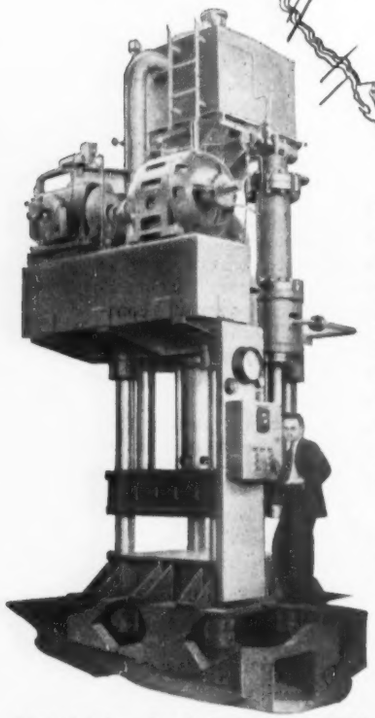
With the addition of seven new six-cylinder models, the International Harvester gas-gasoline power unit line now includes 12 engines ranging from 16.5 to 200 net maximum hp.

New valve-in-head power units and their hp ratings follow: U-1091 (natural gas), 180 net hp @ 1,375 rpm or up to 200 net hp @ 1,600 rpm on factory-approved applications; U-450, 102 net hp @ 1,800 rpm; U-406, 91 net hp @ 1,800 rpm; U-372, 83 net hp @ 1,800 rpm; U-269, 62 net hp @ 1,800 rpm; U-240, 55 net hp @ 1,800 rpm; and the U-220, 50.5 net hp @ 1,800 rpm.

Basically, the new U-1091 power unit and the International UD-24 diesel power unit have many common components. Principal differences are a different cylinder head and elimination of the fuel injection system. The six other new models are power units which have International truck engines. Each brings higher speed operations to direct power applications with resultant savings in operations costs.

WASHINGTON Pulp Baling Presses Chosen for High Output, Efficiency





IN INSTANCE after instance, among pulp mills newly built or expanded for increased production, Washington rapid traverse, automatic cycle control, 1000-ton hydraulic pulp baling presses have the consistent choice. As the sketch above indicates, Washington presses have been selected for outstanding installations extending over a continent-wide area.

Inquiries for either standard or special types of presses are invited.

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WASHINGTON IRON WORKS

CARPENTER STEEL APPOINTMENTS

P. L. CODDINGTON (left) has been appointed Assistant to President of The Carpenter Steel Co. at firm's Alloy Tube Division, Union, N. J., as announced by F. R. Palmer, President. Mr. Coddington had been Manager of Sales at Division since 1945, has been active in the steel industry more than 25 years.

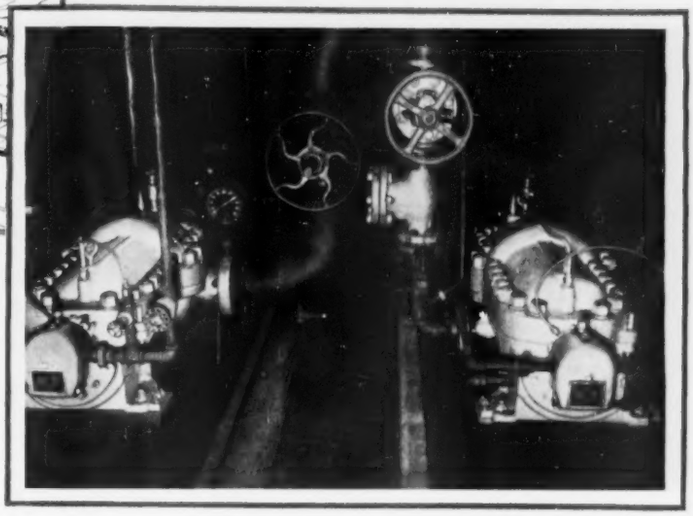
WILLIAM R. STAPLES (right), former Assistant Manager of Sales, has been promoted to the Manager of Sales for Tube Division, which he joined in 1945 as salesman in Cleveland territory. Before advancing to Assistant Manager of Sales, he served as Regional Sales Manager in San Francisco, where he had frequent contacts with pulp and paper industry.

RAY P. WEYER (left), veteran of 16 years with Carpenter Steel Co., has been appointed Western Regional Manager for its Alloy Tube Division with offices at 24 California St., San Francisco. He succeeded Mr. Kelly. Mr. Weyer is familiar with pulp and paper, having covered the New England territory out of New York.

NIELDS B. HAAS (right) is new Mid-Eastern Regional Mgr. for Carpenter's Alloy Tube Div., covering N.Y., Penn., O., Mich., Md., Va., Ky., Tenn., and Southeast to Florida. Graduate of Wesleyan and 14 years in steel, he previously had a smaller 4-state territory in the east.

JEROME BROWNE, Territory Mgr. in Los Angeles, and **HARRY HAUSER**, Territory Mgr., in Seattle, work out of offices in Electric Steel Foundry offices in those cities. **TOM BRENNAN** is Mgr. in Southwest in Houston, Tex.

NEW high-production Halifax paper mill installs NEW Class CNTA high-efficiency Ingersoll-Rand BOILER FEED PUMPS



Halifax Paper Company's new plant, with daily capacity of 270 tons, features last word in ultra-modern equipment

. . . including two Ingersoll-Rand CNTA Boiler Feed Pumps

The Halifax Paper Company takes justifiable pride in its new, high-production mill at Roanoke Rapids, N. C. Equipped with the newest Beloit Paper Machine, this ultra-modern plant can turn out 270 tons daily of Kraft wrapping and converting paper. Advanced design is followed through in all of the equipment required for sustained, high-speed production.

Two I-R boiler feed pumps of the new CNTA design with Unit-Type rotor assembly serve the 60,000 lb/hr boiler supplying the paper machine turbine drive. These 1½", 8-stage centrifugal pumps, shown above, deliver 180 gpm of 230° water against a total head of 1400 ft (605 psi).

Twelve other Ingersoll-Rand pumps and three I-R air compressors also serve the Roanoke Rapids mill and a fourth compressor will soon be added.

Ingersoll-Rand CNTA pumps extend to medium-pressure applications the proved advantages of the Unit-Type Rotor assembly—offering higher sustained efficiency, greater dependability and reduced maintenance. They are available in 4, 6 and 8 stages, for pressures to 1000 psi and in capacities to 700 gpm. For further details, consult your nearest I-R representative.

938-10

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WHAT COOKS WITH CHIPS?—

TWO TYPES OF VIBRATING SCREENS ARE COMPARED

By J. E. Fink

Processing Machinery Dept.
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

UNIFORMLY COOKED PULP is dependent upon wood chips of uniform size being fed to the digester. Oversize chips must be removed to avoid under-cooked pulp and the undersize chips must be removed to avoid over-cooked pulp. Removing the undersize material also reduces the dirt count and circulation difficulties encountered when sawdust accompanies the digester charge.

Improvements in the design of chippers have resulted in a more uniform chip size than previously obtained. This might seem to indicate that screening prior to charging the digester has decreased in importance. However, because of increased technical control and the effect of competitive influence on higher pulp quality, proper chip screening and preparation has maintained and even increased its important position in pulp manufacture.

Proper control of pulp quality and the pulp yield is determined to a large extent by the use of efficient and well designed chip screens in the wood room.

Vibrating chip screens can be classified as either horizontal or inclined screens.

The horizontal type of vibrating screens has a straight line vibrating motion which is produced by off-center weights mounted on two shafts which are geared together. The centrifugal forces of the counterweights, due to the counter rotation of the shafts, are alternately opposed and combined to cause straight line vibration. This straight line vibration at 45° to the horizontal results in a definite conveying motion and makes it possible to operate the screen horizontally.

The inclined type of screen has a circular vibrating motion produced by the combination of an eccentric shaft and counterweights in the flywheels. The vibration is such that the center of the drive sheave is the true center of rotation. Since the circular motion does not result in a definite conveying action, it is necessary to incline these screens to help convey the material over the screen surface.

Given the same set of conditions, the capacity of both types of vibrating screens will be the same. This was confirmed by field tests. The principle of separation on a vibrating screen also bears this out. The principle is based on: (1) stratification of the bed of material in which the smaller particles go to the bottom near the screen surface and the large particles stay on top of the bed of material, and (2) the question of probability, or chance that any given particle will strike the opening in the screen surface squarely enough to pass through.

The conveying rate on a screen inclined 25° may be as high as 100 f.p.m. or more, as compared to approximately 50 f.p.m. for a horizontal screen. This does not necessarily mean increased capacity. The increased rate of travel means that stratification of the bed of material must occur more rapidly and the probability of any given particle scoring a bull's eye on the screen openings is decreased.

The problem of choosing between a horizontal or an inclined screen must be answered on the basis of considerations other than capacity. They include space requirements, initial cost and maintenance.

The horizontal type screen requires less head room than an inclined type screen. The inclined type of screen, on the other hand, takes up slightly less floor space than the horizontal type screen. Either horizontal screens or the inclined screens can be floor mounted or suspended from an overhead structure depending upon space limitations. The problem of space must be answered in terms of conditions in each individual mill.

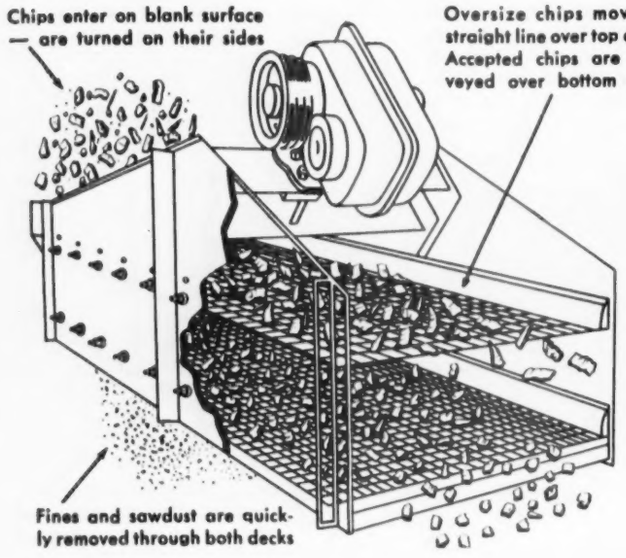
The inclined type of vibrating screen is lower in cost than the horizontal type of screen. In many cases this will be the deciding factor in choosing between horizontal and inclined screens; however, initial cost represents only one of the considerations in selecting a chip screen.

Maintenance

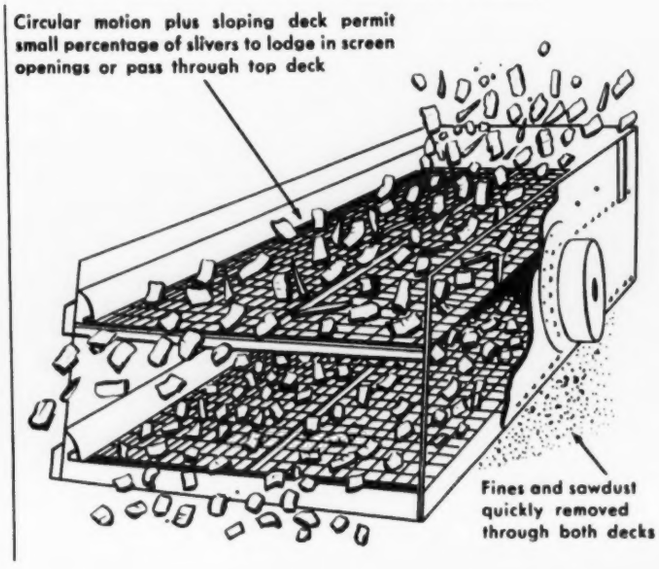
Both types of screens have their mechanism within dust and moisture tight enclosures. Normal maintenance only requires proper lubrication. The mechanism on the horizontal type screen is bolted to the top of the screen body making it possible to remove or install the mechanism as a unit. This makes it possible to reduce down time since a spare mechanism can be installed on the screen and operation resumed. The necessary repairs can be made as time permits. The mechanism

TWO TYPES OF SCREENS DISCUSSED IN MR. FINK'S ARTICLE ARE SHOWN.

AT LEFT—LOW-HEAD VIBRATING SCREEN


Chips enter on blank surface — are turned on their sides
Oversize chips move in straight line over top deck. Accepted chips are conveyed over bottom deck
Fines and sawdust are quickly removed through both decks

AT RIGHT—RIPL-FLO VIBRATING SCREEN


Circular motion plus sloping deck permit small percentage of slivers to lodge in screen openings or pass through top deck
Fines and sawdust quickly removed through both decks

Again!

ST. REGIS

PAPER

INSTALLS

The AIRVEYOR®

When St. Regis Paper Company designed and built its new kraft mill in Jacksonville, Florida, it selected and installed the Airveyor for handling mill-supply chemicals. Three systems are in use for conveying lime and salt cake for various functions in the mill. This now makes a total of seven Airveyor systems St. Regis has installed in four of its plants.

St. Regis has learned from experience that the Airveyor is engineered and built for superior performance in the pulp and paper industry, as have many others who have continued to purchase duplicate systems after initial installations have proved their worth.

If you handle lime, soda ash, salt cake, starch, clays, and have an unloading or in-plant problem, why not take advantage of Fuller's 27 years of experience in the field of pneumatic conveying. A study of your conveying system will cost you nothing. Write today for complete information.

FULLER COMPANY

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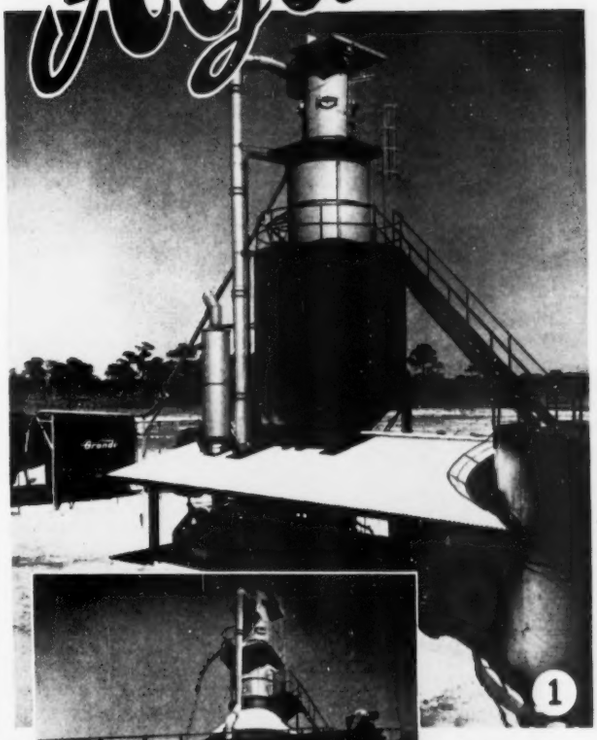
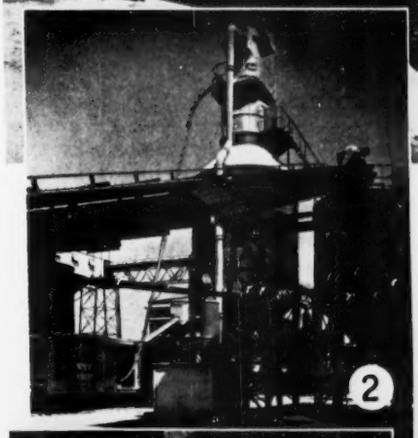
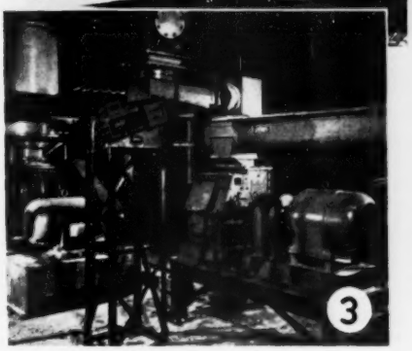






1

Unloading pebble lime from cars to storage bin at rate of 10 tons an hour, for water-treatment plant.

2

Unloading pebble lime from cars at rate of 10 tons an hour, delivering to storage bin in causticizing plant.

3

Vibrating pan feeder arrangement delivering salt cake to pulverizer from storage bin. The minus 1/8" salt cake is conveyed to a service bin in the recovery unit by the Airveyor. Exhauster, extreme left, furnishes air for the Airveyor Systems.

4

Unloading salt cake from cars to two storage bins at rate of 10 tons an hour. This same system also reclaims from storage and delivers to a service bin in the recovery building.

A-178
2243

YOU'LL MAKE MORE PROFIT WHEN YOU

FIGHT CORROSION

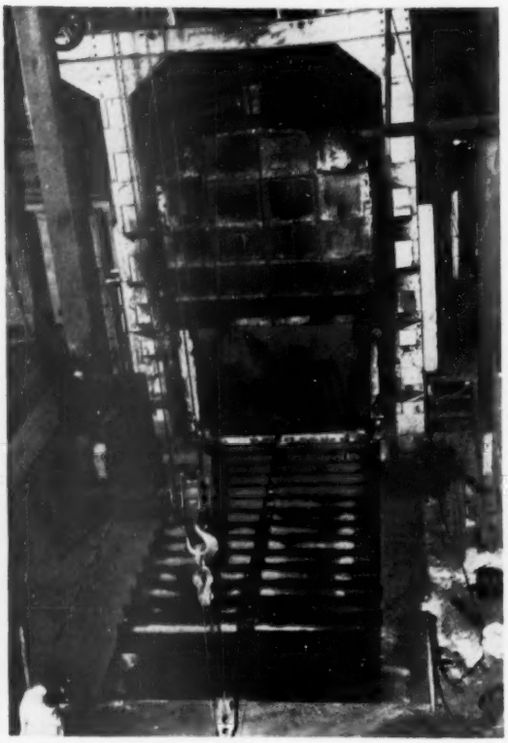
with ESCO Heat-Treated High Alloy Steel Castings

BEFORE

AFTER

These photomicrographs illustrate importance of proper heat treatment in "locking" carbides in solution to produce extra high corrosion resistance.

Laboratory accelerated corrosion test checks result of heat treatment.



ESCO ALLOY CASTINGS OUTLAST OTHERS MANY TIMES!

A wide range of ESCO High Alloy Products is available for critical conditions of Heat and Corrosion.

- Pipe and Flanges
- Heavy-Duty Valves
- Standard and Special Flanged Fittings
- Screwed Fittings
- Welding Fittings
- Kiln Cooler and Roaster Parts
- Refinery Castings
- Heat-Treating Parts
- Conveyor Chains

An important factor in the production of *ESCO* Alloy steel castings for corrosion resistance is the advanced technique of heat-treating and water quench developed at *ESCO*. It takes only *30 seconds* for a load of steel castings to pass from the oven into an 8000-cubic-foot water quenching tank! Capacity, and speed of quench illustrates a typical *ESCO* answer to a tough production problem. For only with such facilities can you be assured the uniformly high corrosion resistance of *ESCO* Stainless steels.

ESCO has solved many tough heat and corrosion problems for industry as part of its application engineering and foundry service! *ESCO* maintains one of the largest foundry metallurgical laboratories in the country to help you with really tough corrosion problems. Your inquiry is invited. Write for full details or ask for informative Brochure *175*.

ESCO

Offices and Warehouses: Honolulu, Hawaii; Houston, Texas; New York, New York; Los Angeles, San Francisco, California; Seattle, Spokane, Washington; Centralia, Pennsylvania; Eugene, Medford, Oregon; Salt Lake City, Utah. In Canada: Vancouver, B. C., and Toronto, Ontario.

ELECTRIC STEEL FOUNDRY CO.

2166 N.W. 25TH AVE., PORTLAND 10, ORE. 712 PORTER ST., DANVILLE, ILL.

on inclined screens usually passes through the body and must be repaired in place. These features should be considered when continuous production is required.

After the type of screen is selected, there still remains the problem of what size chip screen to use. Average daily production of wood chips should not be used in determining screen size, but rather use the peak, or surge load that the screen will be expected to handle. Actually, chip screens should never be surge loaded if quality of screened product is to be maintained. However, sometimes conditions prevent the elimination of surge loading, so the surge load should be used as a basis for choosing screen size.

Surge loads occur due to irregular discharge from the chipper, which in turn is caused by variations in the diameter of the logs being chipped as well as the method of feeding the chipper.

An economical way to avoid installing oversize screens to accommodate surge loads is to install a surge hopper and feeder ahead of the screen. This arrangement serves the dual purpose of providing a constant feed as well as distributing the feed across the full width of the screen. The surge hopper should be large enough to handle the largest surge load expected.

If conditions do not permit the installation of a surge hopper, screens as much as 25 percent larger than those required for average production might have to be used to handle surge loads.

Regardless of which type of screen is selected, the feed arrangement should be sufficient to obtain maximum use of the screen. The chips should first be fed onto a blank surface where they will have a chance to turn on their sides and be conveyed onto the screen in that position. If chips are spouted directly onto the screen surface, long slivers and oversize chips have a tendency to pass through the screen or stick and cause blinding. The feed arrangement should also be designed so that chips are fed onto the screen across the full width of the screen.

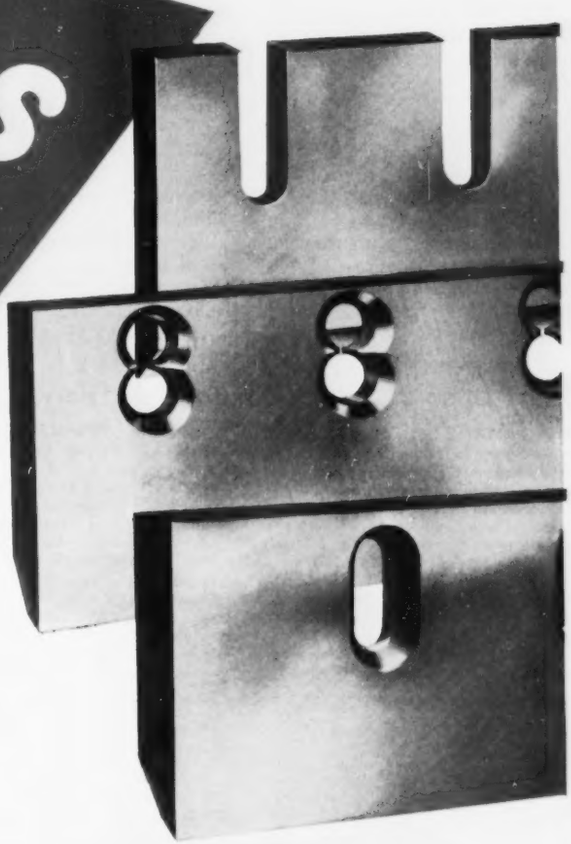
Feeding the chips across the full width of the screen is important. In some cases where the chips are spouted directly onto the screen surface and no provision is made to spread the feed over the width of the screen, as much as 20 percent of the area at the feed end of the screen is ineffective and at the same time acceptable chips are discharged with the oversize. Feeding the chips over the full width of the screen could correct this.

A simple answer, then, to the question posed in the title of this article is the oversize chips are undercooked, the proper size chips are properly cooked and the undersize chips are overcooked. Proper control of pulp quality and the pulp yield is determined to a large extent by the use of efficient and well designed chip screens in the wood room.

EDWARD N. CROOK, president of the Crook Paper Box Co., North Kansas City, Mo., has completed 50 years in the paper box industry. He was born in Brush Creek, Tenn., and began his long career in 1902 in Nashville, Tenn.

Get the DUST OUT of your PROFITS

...with SIMONDS T-18 CHIPPER KNIVES



More usable chips . . . clean-cut and uniform in size . . . with a minimum of slivers and dust . . . this is what you *want* from your woodroom . . . this is what you *get* with SIMONDS T-18 KNIVES on your chippers! Made of extra tough steel developed and poured in Simonds own Steel Mill, these rugged, shock and abrasion resistant knives are known for their ability to take the high speed, brutal beating of chipper operation . . . to hold a keen cutting edge . . . to turn out clean-cut, uniform chips. Try T-18 Knives on *your* chippers . . . get the dust out of *your* profits. Order through your Industrial Distributor.

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Personals

SOUTHERN NOTES

ROBERT BRINGMAN, technical advisor to the St. Joe Paper Co., Port St. Joe, Fla., spent a weekend recently with his brother-in-law, *E. (PAT) SURPRISON*, employment manager for Nekoosa-Edwards Paper Co., Port Edwards, Wis.

LOWELL McGINNIS, shift superintendent from the Shelton, Wash., mill of Rayonier Inc., has arrived in Jesup, Ga., its new mill site, to take over as assistant pulp superintendent.

ROGER L. RICHEY is new maintenance and power superintendent of the Mead Corp.'s Harriman, Tenn., division. He went there from Chillicothe, O., division. He is a graduate of U. of Illinois, 1950, and was born in Illinois at Martinsville and served in the army air force in World War II.

JOHN J. SHAND, Southeastern regional sales manager for Clark Equipment Co., has moved headquarters from Norfolk, Va., to 161 Spring St. Bldg., Atlanta, Ga.

PERCY R. HALL is new traffic and shipping manager for Sonoco Products Inc., Hartsville, S.C., since retirement recently of *H. A. DEANE*. Mr. Hall was born in Richmond, Va., and served with railroad companies in the South.

PETER BRENNAN, 22, who has joined Union Bag, Savannah, as a chemical engineer after recent graduation from Catholic University, Washington, D.C., is a native of Dublin and came to U.S. from Eire in 1939 when his father, a career diplomat was assigned to the Irish embassy here.

F. H. (CURLY) SINGLETARY has been named to represent Appleton Woolen Mills in the Southern territory comprised of states of Arkansas, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas. Mr. Singletary has had wide and varied experience in the southern kraft territory, with his most recent connection being Calcasieu Paper Co., Elizabeth, La. He will maintain residence for the present at Pine Prairie, La.

STAN TARLTON, chief electrician of Rayonier Inc., Fernandina, Fla., has been given a title that may start a national trend for more and better titles. He has been voted "The Switchboard Operators' Dream Man of 1953." For those who don't know, switchboard operators' requirements do not involve "muscle men" or handsome profiles, but simply ask that dream men (a) answer code calls promptly; (b) report to operator when leaving plant; (c) report to operator on returning to plant.

WILLIAM F. LIGHTSEY has been named assistant manager, woodlands division, St. Regis Paper Co., Jacksonville, Fla. Mr. Lightsey joined St. Regis in 1951 after previous experience with Union Bag and Paper Corp., Dixie Wood, Inc., and Augusta Hardwood Co. He will directly assist *MARCUS C. RAWLS*, division manager, in his new position.

TWO IMPCO MEN IN NEW POSTS. At left, JOSEPH K. PERKINS moved from Richmond, Va., to headquarters of Improved Machinery Inc., Nashua, N. H., and right, RUDOLPH C. RICHTER who takes over in the Southeast with headquarters at Lynchburg, Va.

NORTHEAST NOTES

RAY E. KILTY is new assistant manager of Boston sales office of A. E. Staley Mfg. Co. working with *G. H. BATCHELDER*, manager. Mr. Kilty has worked with pulp and paper industry in New England nearly 20 years and will continue these contacts. *JOHN WALSH* has also been appointed technical sales representative to cover upper New York, Maryland, Delaware and parts of Pennsylvania and New Jersey. He is a graduate of Harvard, formerly with Franconia Paper Corp.

JOSEPH K. PERKINS, formerly representative for Improved Machinery Inc. in the middle Atlantic States, has moved from Richmond, Va., headquarters to the home office at Nashua, N.H. Mr. Perkins is being replaced in the Southeast by

RUDOLPH C. RICHTER, graduate of University of Georgia and member of APPMS and Tappi. His offices will be in Lynchburg, Va.

J. H. MATTHEWS is new executive vice president of Raybestos-Manhattan, Inc. A graduate of Stevens Institute of Technology, he started with the original Manhattan Rubber Mfg. Co. in 1914.

THOMAS L. STIRLING has been appointed sales manager of Champion-International Co., Lawrence, Mass.

GOODBYE TO COLUMBIA RIVER! HELLO, TEXAS! NATWICK HONORED

ALBERT G. (BUFF) NATWICK, in Scotch plaid cap at head of table, was given a rousing farewell by old friends in Pacific Northwest pulp and paper industry at this Portland, Ore., dinner. He has left his ranch home on Columbia River near Camas, Wash., to live at Evadale, Texas, where he is Resident Manager in charge of mill and operations of new East Texas Pulp & Paper Co. Seated l to r: ZINA A. WISE, Pres., Griffith Rubber Mills; COL. ALBERT H. HOOKER, Hooker Electrochemical Co. (sporting arm in sling, broken on his Hereford ranch); ALLAN ABRAMS, Research Vice Pres. of Marathon Corp.; MR. NATWICK; DON SHIRLEY, Electric Steel Foundry Co.; LEROY SHANAMAN, Penn Salt Co. of Washington; JIM JULIEN, Crown Zellerbach Corp., Camas; DOUG ARMSTRONG, Vanderbilt Co. Standing, l to r: RAY SMYTHE, Rice Barton Corp. and Smythe Co.; KEN HALL, Pres., Western Machinery; FRED ALSOP, Fred Alsop & Co.; HALVAR LUNDBERG, Seattle consulting engineer; CLARK HERITAGE, Research Director, Weyerhaeuser Timber Co.; ALBERT S. QUINN, Pres., Stebbins Engineering Corp., and H. A. DES MARAIS, Penn Salt. Many other old timers of West Coast industry sent telegrams and messages. There were many quips about Texas adding a "Black Republican" to its population, and swapping Chinook salmon for a tasty catfish. Buff was presented with a monogrammed traveling bag.

BULKLEY-DUNTON *announces*

THE FIRST LOW-PRICED SAVE-ALL DESIGNED FOR POLLUTION CONTROL

NEW
FLOTAIR

(Companion to the COLLOIDAIR SAVE-ALL)

CUTS POLLUTION-CONTROL COSTS

Where low-cost furnishes do not justify high expenditures for fibre recovery in the control of pollution, FLOTAIR is ideal. This new, circular flotation save-all is designed specifically to clarify white water in compliance with state, regional, and local pollution requirements . . . and it also provides good recovery of fibre.

compare the installation costs of FLOTAIR with any save-all system on the market. Write for details now!

White water treatment systems for all your needs

Bulkley-Dunton offers you a complete line of white water treatment equipment including the famous COLLOIDAIR SAVE-ALL for high efficiency fibre recovery and the outstanding new F. E. ROTARY SAVE-ALL. A full staff of engineers is also at your service, and we are prepared to design and supply special units for specific requirements. Write for details!

BULKLEY-DUNTON PROCESSES, INC.

Dept. C-2, 295 Madison Ave., New York 17, N. Y.

Pacific Coast: Dept. C-2, Security Bldg., Pasadena, Calif.

Personals

NORTHEAST NOTES—Continued

C. J. DYNES, Hollingsworth & Whitney Co., Boston, Mass., has been appointed consultant to the Department of Defense and will act in an advisory capacity on matters relating to pulpwood, pulp and paper. Mr. Dynes served in the same capacity on the Munitions Board which was abolished in the reorganization of the Department of Defense.

ALBERT S. QUINN, JR., whose father is president of Stebbins Engineering Corp., Seattle, got marching orders practically simultaneous with his engineering diploma from Santa Clara University. He is now in advanced artillery school at Fort Sill, Okla., where he is a second looey in field artillery.

JOHN J. RYMELL has become supt. of United Board & Carton's Syracuse, N.Y., mill whe re he has worked 24 years.

GEORGE H. WURSTER, Hartford, Conn., eastern sales manager for Heppenstall Co., was awarded Heppenstall's President's trophy as "salesman of the year."

JAMES TRAILL, supt., W. C. Hamilton & Sons, Miquon, Pa., is recovering from a serious operation at Bryn Mawr hospital.

HENRY J. HEMMENS, JR., has been elected president of Berlin & Jones, Inc., 110-year old New York envelope manufacturing firm. Graduate of Columbia, he served in the Navy as lieut. commander in W.W.II and has been in the paper industry since 1927.

H. L. EVANS has been named vice-president i/c manufacturing, Flintkote Co., with headquarters East Rutherford, N.J.

The

WIDEST

Fourdrinier Wires

The fact that Lindsay is now weaving the widest Fourdrinier wires in this country is an indication of the extensive resources, facilities and experience at your command and that of the industry to further the art of paper making.

THE LINDSAY WIRE WEAVING COMPANY • CLEVELAND 10, OHIO

Lindsay WIRES

FOR PAPER MILLS

IN NEWS FOR BLACK-CLAWSON COS.

FRANK T. PETERSON (left), newly elected Vice Pres. of The Black Clawson Cos., whose headquarters are in New York City, made a survey in South America in August and September in an effort to find facilities for manufacturing equipment there. He played a leading role in Black-Clawson's similar activities in Europe.

HOWARD P. (PETE) ESPENMILLER (right), appointed new Director of Black-Clawson Laboratories at Fulton, N.Y. He has been with the Dilts Division in research at Fulton since graduating from Syracuse University, with a pulp and paper manufacture degree in 1941. He succeeds George B. Nicholson who has joined National Folding Box Co., New Haven, Conn.

Full Time Medical Office for K-C

Kimberly-Clark Corp. has created a new office of medical director with a full-time associate, both doctors of medicine, to serve its operations in U.S. and Canada, employing over 12,000 men and women.

Dr. Gordon Peterson, graduate of U. of Wisconsin medical school in 1932, an intern in California and New York hospitals, and recently superintendent of K-C's sanitary products research and development, becomes the director.

Dr. J. B. MacLaren, Appleton, Wis., practicing physician and surgeon for many years, and medical consultant to Kimberly-Clark for 29 years and part-time medical director the past six years, becomes associate director.

Ed Coughlin Dies In Kalamazoo

Edward T. A. Coughlin, for the last three years chief of the paper and pulp products section, research and development division, OQMG, Department of Defense, Washington, D.C., died Aug. 20, at a Kalamazoo, Mich. hospital following an emergency appendectomy. He was born 62 years ago in Holyoke, Mass.

A graduate of the University of Maine, he entered the paper industry as chemist with Monarch Paper Co., Kalamazoo, and became its coating superintendent.

Subsequently, he was technical director of Allied Paper Mills; general manager of Franklin Coated Paper Co., mill manager of the New Jersey Coated Paper Co.; paper advisor of the W. F. Hall Printing Co.; director of research of Pettingill, Inc.; and service manager of Bryant Paper, Kalamazoo. Recently he was with Charles T. Main, Inc., Boston. He was a charter member of the Superintendents Association and a past president.

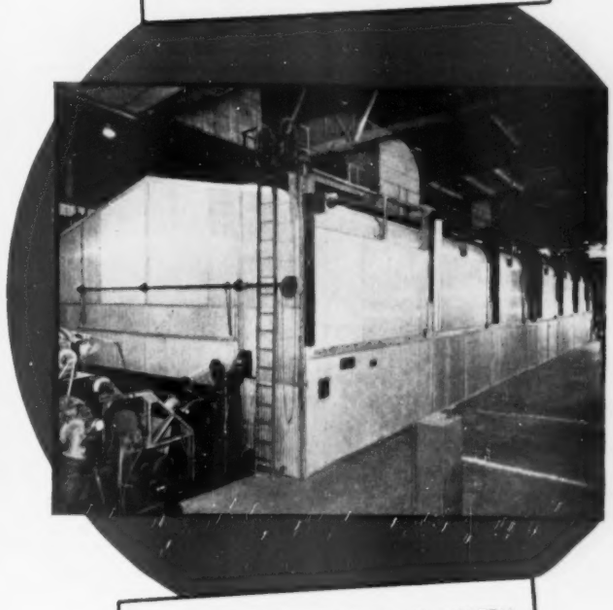
Watch ROSS for the newest developments in the paper industry!

NEW ROSS PULP DRYER

It eliminates the objectionable features of other methods. A well built unit with vital parts easily accessible. Equipped with counterflow principle, arranged for individual control of tension on each pass.

NEW ENCLOSED MACHINE HOOD

Entirely new design and type of construction provides increased efficiency, more uniform drying, reduced back pressure, improved working conditions and substantial savings in steam and power.



NEW TYPE GREWIN NOZZLES

With the experimental stage passed, this new improved Ross-Grewin Nozzle is now available to the paper industry. This nozzle is proving particularly effective on wide paper machines.

NEW TRIM CONVEYING SYSTEM

Now it is possible to pneumatically convey as a ribbon the trim from winders and rewinders for heavier basic weights. Vertical injectors can be used where space limitations bar horizontal installation.

NEW IMPROVED YANKEE AIR SYSTEM

NEW patented Double-Flo Yankee Air System which may double the effectiveness of some existing air handling units. Principle adaptable to present installations and will be applied on new ROSS applications.

ROSS SYSTEMS

J. O. ROSS ENGINEERING CORPORATION

MANUFACTURERS OF AIR PROCESSING SYSTEMS

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BOSTON • DETROIT • CHICAGO • SEATTLE • LOS ANGELES

ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

Personals

MIDWEST NOTES

JOHN E. ALEXANDER, president and general manager of Nekoosa-Edwards Paper Co., Port Edward, Wis., and Mrs. Alexander gave their daughter, *MARCIA MORRILL ALEXANDER*, in marriage on Aug. 8 to *THOMAS JOSEPH McCORMICK*, son of Mrs. Joseph McCormick, of Oak Park, Ill. About 200 attended the wedding and reception, the wedding being in St. Alexander Catholic Church, Port Edward. The bride attended Northwestern U. and Katherine Gibbs School and the groom, a Northwestern grad, enters the navy soon as an ensign.

THOMAS SEIDEL, who was general superintendent at Bergstrom Paper Co., Neenah, Wis., since 1943 and employed at the mill 32 years, working up from fifth hand, died recently after a short illness. He was 56.

DR. JOHN C. BLETZINGER has been appointed superintendent of Kimberly-Clark's sanitary products development laboratory, succeeding *DR. GORDON W. PETERSON*, who was named the company's first fulltime medical director.

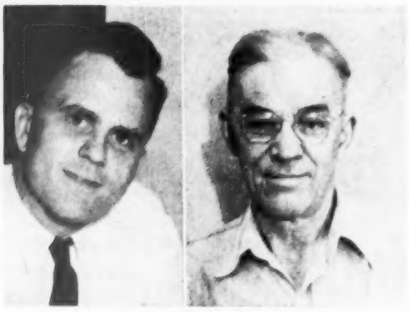
CHARLES T. LOCKE, who has worked out of Chicago for years, has moved to Plymouth, Wis., and will work out of there in representing DuPont dyes and chemicals division to mills in Wisconsin and Michigan.

BURT E. ASHMAN, former office manager of the Institute of Paper Chemistry in Appleton and since then at Drake University, has become assistant to the president in business management at Pennsylvania College for Women.

SCHMITZ, ROESER IN NEW POSTS

HENRY A. SCHMITZ JR. (left), has retired from A. O. Smith Corp., where for years he specialized in pulp mill digesters sales and service, and has joined Allan Engineering Co., Milwaukee, and is Sales Rep. for U.S. Hoffman Co., mfgrs. of oil filtering and conditioning equipment.
ANTON ROESER (right), who has been appointed Superintendent of Converting at Charmin Paper Mills, Green Bay, Wisc., as announced by J. M. Conway, President and Gen. Mgr. Mr. Roeser, a Charmin (formerly Hoberg) employe 26 years, succeeds Joseph Roskams who joined the firm's technical staff.

KEY MEN AT WAUSAU MILLS



JOSEPH H. KUHNS (left), appointed Plant Engineer for Wausau Paper Mills, Brokaw, Wis., as announced by DAVID B. SMITH, Pres. and Gen. Mgr. He is 34, graduate with honors at Purdue in 1940, was six years in DuPont's Electrochemical plants in Niagara Falls, N.Y., as Engineer, Assistant Project Engineer and Utilities Supervisor. He was Design and Field Engineer with Wyandotte Chemicals for two years, and Mech. and Design Engineer for Marathon's Lignin Plant at Rothschild, Wis., five years.
WILLIAM BROWN (right), a veteran of 37 years experience in the Brokaw mill, was appointed Master Mechanic. His career is almost a Brokaw history as he has been the town's Volunteer Fire Chief, a political leader and in the mill was Pipe Fitter Foreman.

HARRY McGOVERN has resigned as director and vice president of manufacturing of River Raisin Paper Co., Monroe, Mich., to enter other business for himself

LEO SCHUBART, president of Neenah (Wis.) Paper Co., has been named by the U. S. Army Quartermasters Corps as one of a group of paper industry executives to advise it on procurement of writing and book papers.

ARTHUR L. FOTZ Jr., graduate of Purdue, has been named manager of the Detroit district for DeLaval Steam Turbine Co.

LEROY LEE, a Mead employe since 1947 after graduating from U. of Minnesota and attending Stanford U., has been appointed chief draftsman of the Chillicothe, O., division of The Mead Corp. *WILLIAM GALLAUGHER* was named assistant finishing department superintendent and *PHILLIP BOST* was named tour foreman in finishing at the same mill.

HAROLD BARNHART, wood office clerk, Chillicothe, O., mill of The Mead Corp., died recently.

LOGAN MATHER, native of Wyoming, O., has been promoted to chemist in the technical department of The Gardner Board & Carton Co., Middletown, O.

CLYDE EVERHART, 20 year veteran of The Crystal Tissue Co., Middletown, O., has been named foreman of its converting shipping department.

HERBERT M. BYRD is manager of Sonoco Products Co.'s new converting plant at Akron, O.

GEORGE LYDICK, Beckett Paper, is new chairman of the Miami Valley Superintendents. *DEAN NEWELL* of Philip Carey Mfg., is first vice chairman, and *ROBERT O. STEVENSON* of Champion is second.

CHARLES CAIN, district sales manager for Hooker Electrochemical Co., in their still quite new Chicago offices at No. 1 LaSalle St., right on Madison St., and his assistants are looking forward to opening next year of the new Hooker chlorine-caustic soda (100,000 tons capacity) plant at Muskegon, Mich. In recent months *BILL GILLESPIE* and *DON McKENZIE*, both from Hooker headquarters at Niagara Falls, moved to Chicago, after Mr. Cain moved down from Milwaukee. Most of the new production will be marketed by the Chicago staff. Mr. Cain's territory, primarily in the Lake States, now extends to the Dakotas and Texas, while Mr. Gillespie covers lower Michigan and the Central States as far as Iowa and Tenn. Mr. McKenzie stays at No. 1 LaSalle.

PACIFIC COAST NOTES

RALPH P. McDONALD has been named general production manager of Fibreboard Products Inc., with San Francisco headquarters. He had been assistant resident manager at Antioch, Calif., division. *DR. R. W. K. ULM*, former technical director at San Joaquin, Calif., Div., succeeded him as assistant res. mgr. at Antioch.

HARRY L. DEITS, senior engineer at Crown Z, Port Townsend, is new assistant plant engineer, post made vacant by the death May 10 of a veteran Crown employe, *ALVIN J. BOGAN*. The transfer of *MAX BROWER* to senior engineer from assistant to the master mechanic was effected to replace Mr. Deits. Moving up into Mr. Brower's former position was *ROBERT ALLEN*, millwright lead man.

TECHNICAL DIRECTORS IN FAR WEST

DR. MORRIS WAYMAN (left), has joined Columbia Cellulose Co. at Prince Rupert, British Columbia as Technical Director after ten years with Canadian International Paper Co.'s subsidiary, Industrial Cellulose Research Ltd., Hawkesbury, Ont. A Ph.D in organic chemistry from the University of Toronto, Dr. Wayman has written on such subjects as fundamental chemical considerations in sulfite cooking and manufacture of chlorine dioxide.
DONALD PEARSON (right), whose appointment as Technical Director of the Ketchikan Pulp Co., now building a high alpha MgO process pulp mill at Ward Cove, Alaska, near Ketchikan, is announced by ERIK EKHOLM, Vice President of the company. Mr. Pearson graduated in chem. engineering at the University of Washington in 1944 and after serving some time in the Navy, came back to earn his master's at Washington in 1948. He has since been with Puget Sound Pulp & Timber Co., Bellingham, Wash., one of the principal owners of the Alaska company, as chemical engineer on projects involving operations. He moves to Alaska next Spring.

Personals

FRANK N. YOUNGMAN, vice president of Crown Zellerbach Corp., and president of St. Helens Pulp & Paper Co., its subsidiary, has been appointed chairman of the Advance Gifts Division of the United Fund 1954 campaign organization for Oregon state's populous three counties in the Portland area.

LITTLETON C. BARKLEY, 52, general sales manager, West Coast division of Raybestos-Manhattan Inc., died Aug. 27 at San Mateo, Calif. He joined Manhattan in New Jersey in 1926 and the last six years had been at the San Francisco post. His widow, a son in the air force in Japan and three daughters survive him.

MARION H. MARKS has been named manager of market research for Crown Zellerbach Corp., San Francisco. He has been with the firm 30 years.

NEIL FRANKLIN, transfered from the Crown Zellerbach logging camp at Neah Bay on the far Northwest tip of the Olympic Peninsula, is now assistant personnel supervisor at the Port Townsend mill.

W. K. APPLING, office manager at the Port Angeles Division of Fibreboard Products, Inc., moved to East Antioch, Calif., the San Joaquin Division, as office manager and was replaced in Port Angeles by *KENNETH GARRETT*, former accountant for the company in San Francisco.

FOR GOODYEAR IN FAR WEST

THE GOODYEAR TIRE & RUBBER CO., Akron, O. has announced new Chemical Division Sales Office in Portland, Ore., headed by ROY WILLIAMS (in picture).

Goodyear Chemical Div. Office in Portland, Ore.

Formation of a new chemical division sales office in Portland, Ore., has been announced by The Goodyear Tire & Rubber Co. and it is headed by Roy Williams, who will cover the Pacific Northwest states—Washington, Montana, Idaho and Oregon, according to H. R. Thies, manager of the chemical division in Akron, O.

Mr. Williams has been assigned to this area to improve servicing of the fast-growing pulp, paper and paint industries. He has had considerable experience in paper coatings and impregnates. He was born in Portland and he and his wife live there at 1400 N. W. Raleigh St. He attended Multnomah College and Reed College in Portland.

CLARENCE ENGLUND, former technical assistant in steam and power, at Port Townsend, Wash., is the new technical assistant to the master mechanic at C-Z, Lebanon, Ore., sulfite mill. Mr. Englund, who flies his own light plane, recently had a rather terrifying experience, but one with a happy ending. Attempting to take off on a flight, he barely got his plane going when the engine sputtered and died. He managed a landing and then discovered some youths had drained his tank, which he'd filled the night before. Another private pilot, *FRANCIS WILLARD*, a 1953 graduate of the University of Washington in mechanical engineering, has joined the Port Townsend engineering staff. Just before going to work for C-Z, he flew his Cessna 140 2-seater to Texas and back.

HUGH OSBORN, Northwest technical representative for General Dyestuff Corp., Portland, Ore., and wife *CAROL JEAN OSBORN*, became parents July 13 co-incident with birth of their son, Richard Daniel.

ELIZABETH ANN WADDELL, daughter of *R. D. WADDELL*, technical supervisor of CZ, Lebanon, Ore., was married at church ceremonies Aug. 23 to *MERRILL NEWMAN*, Korean veteran. Newlyweds are living at Eugene, where he has enrolled at U. of O. for graduate study.

THOMAS I. MEAHAN, maintenance supervisor at Crown Zellerbach, Carthage, N.Y. mill, has transferred to the organization's Camas, Wash. operations as supervisor of paper machine and beater room maintenance, a maintenance department position.

ROLAND L. SUNDSTROM, management staff assistant of CZ, Camas, Wash., has been promoted to assistant training supervisor, personnel department.

WILLIAM BEATON, formerly technical assistant in Crown Z's Port Townsend multiwall bag department is now technical assistant in converting to *BEN WARREN* at the company's big Camas mill. Moved up to take Mr. Beaton's place is *JAMES NORRIS*, transferred from the engineering department.

A GOOD COMBINATION

Trained Personnel
Modern Facilities

Specializing in the Fabrication of Stainless Steel, Copper, Nickel and Copper-Nickel Alloys for Industry.

NORTHWEST COPPER WORKS, INC.
1303 No. River Street,
Portland 12, Oregon

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Personals

PACIFIC COAST NOTES—Continued

J. R. CALLAHAN, JR., engineer of Pulp Division, Weyerhaeuser Timber Co., Longview, Wash., has been promoted to assistant plant engineer, according to Plant Engineer *D. G. FELTHOUS*.

ROGER WIEWEL, of engineering department, Weyerhaeuser Timber Co. Pulp Division, Longview, Wash., married Miss *CARROL L. SCHUMAN* in Honolulu, T.H., Sept. 12. The couple honeymooned in the islands before returning stateside later in the month.

WALTER DIEHM, division industrial engineer of Crown Zellerbach Corp., West Linn, Ore., transferred to the organization's San Francisco offices early in September to participate in production planning and control. *RUSS LAWTON*, assistant division industrial engineer of CZ Camas, Wash. transferred to West Linn to become division industrial engineer.

F. B. McLARNEY, assistant purchasing supervisor of CZ West Linn, has moved to the firm's Portland offices as district assistant purchasing supervisor. *JOHN TILDEN*, formerly of Camas purchasing department, became assistant purchasing supervisor at West Linn.

JACK CUMMINGS, until recently general superintendent of finishing, converting and yard departments, CZ West Linn division, has transferred to the organization's Los Angeles converting plant as assistant superintendent.

ARTHUR NEWCOMB, paper mill supt., wrapping end, Crown Zellerbach Corp., Camas, Wash., was promoted to paper mill supervisor at C-Z's St. Helens Pulp & Paper Co. plant at St. Helens, Ore. *CLARENCE BROWN*, for nearly a year asst. supt., of the dept., has been promoted into Mr. Newcomb's former position.

JOE GORMAN resigned as paper mill supt. at St. Helens Pulp & Paper Co., to become supt. of No. 5 machine of Brown Paper Mills, Monroe, La. Following 23 years affiliation with the St. Helens firm, he actively took up his Monroe duties July 20.

ARTHUR F. EYMER, formerly No. 3 machine tender at C-Z, Camas, Wash., plant has been promoted to shift foreman to tissue end.

H. H. ROBBINS, Oregon district sales manager, Fibreboard Products, Inc. has been promoted to general sales manager, Fibreboard Products (Eastern Division) Inc., according to B. P. Altick, vice-pres., charge of sales. Mr. Robbins will be succeeded in the Portland office by Ralph S. Lau.

A. R. HERON, VP C-Z Corp., is president of newly formed Federated Employers of San Francisco.

EDGE N. WENNBERG, superintendent of board manufacture, Weyerhaeuser Timber Co., Longview, Wash., was acclaimed "Papermaker of the Month" in a recent issue of Noble & Wood's *Agitator*. It says Mr. Wennberg "is known throughout the industry for his limitless energy and technical knowledge," and gives highlights of his career. He was born in Norway in 1905, graduated from Horten, Norway, Technical School and Syracuse U. (N.Y.) and started with I.P. at Glens Falls.

"From ingot to fourdrinier wire"

ANNEALLING THE WIRES

Just as one alloy differs from another, so do their individual requirements for annealling vary. A definite ratio of speed and temperature must be used for each type. Skilled employees, tending our modern annealling furnaces, adhere faithfully to the proper speed-heat formulae so that your Eastwood wire will have the longest possible life.

Because the Eastwood-Nealley plant is a *completely integrated* one, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production.

We are proud to say they are *truly ours*—"from ingot to fourdrinier wire".

EASTWOOD-NEALLEY CORPORATION
Belleville, N. J.

CANADIAN NOTES

IAN BARCLEY, formerly of Montreal, has been appointed assistant secretary of Columbia Cellulose Co., with headquarters in Vancouver, B.C.

W. S. ROTHWELL has been named treasurer of Abitibi Power & Paper Co., Toronto, succeeding *HOWARD YOUNG*, for many years with the company. *L. G. ARNOLD* and *W. H. S. POTE* have been appointed as assistant treasurers.

TOM COLLINS has resigned as mechanical superintendent, Harmac pulp division, MacMillan & Bloedel, and has entered the automobile business in Abbotsford, near Vancouver, B.C.

New manager of pulp mills for the E. B. Eddy Co., Hull, Que., is *D. G. McCRONE*, graduate of the University of Toronto who has been with the company for several years.

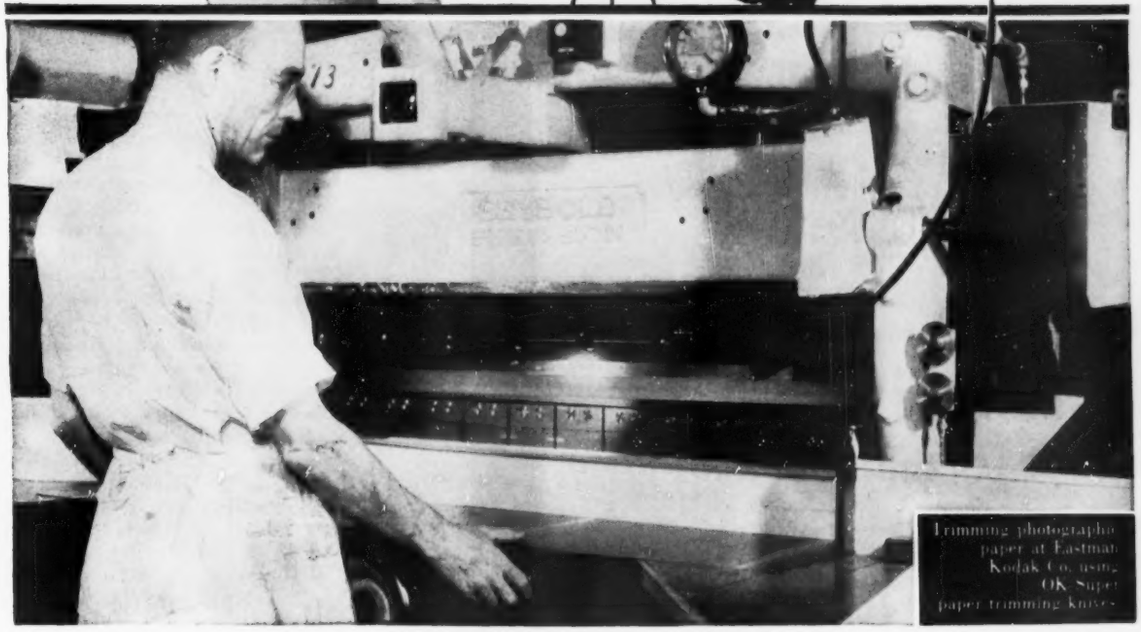
J. A. HANNA, who joined Bathurst Power & Paper Co. in 1925 after several years with Dryden Paper Co., Celotex Corp. and Brown Corp. has been named manager of operations at the Bathurst mill.

I. H. POTTIE has been appointed control superintendent of Mersey Paper Co. at Liverpool, Nova Scotia, and *G. W. ROBINSIN* is the new mill chemist there.

GORDON ROOT, public relations manager of Columbia Cellulose Co. and associated Celanese subsidiaries in Canada, underwent a serious operation recently and has been convalescing in Edmonton, Alta.

it's OK let 'er go!

...with OK Super paper trimming knives at Eastman Kodak Co.



Trimming photographic paper at Eastman Kodak Co. using OK Super paper trimming knives

Wherever top precision cutting and trimming is required, you'll find Ohio Knives. The Eastman Kodak Co., Rochester, New York, where precision is a by-word, has been using Ohio Knives on their trimming machines since 1939!

Actual tests made in companies requiring this operation have conclusively proven OK Knives deliver 25% to 40% longer service, resulting in more production at a lower cost!

OK Knives are made of the finest alloy steel specially hardened to stand the heaviest cutting, while still retaining an ultra keen edge.

Standard OK Super Knives are beveled and hardened for practically all types of cutting. For unusually tough jobs like trimming aluminum foil, film, cellophane, glued board, plywood, etc., these knives are available in special bevels and hardnesses.

Manufacturers of
OK SLITTER KNIVES
CHIPPERS • TRIMMERS
REVOLVING CUTTERS

GO WITH OHIO GREEN

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

OHIO KNIFE CO., CINCINNATI 23, OHIO, DEPT. F

Please send free Bulletins on OK Super Paper Trimming Knives, etc.

Name.....

Company.....

City.....State.....

Personals

D. C. OLSON, formerly mechanical superintendent of Abitibi Power & Paper Co. in the Fort William area of Ontario, has entered the automotive field there.

MALCOLM COCHRAN, dean of the Lakehead foresters and for many years representative of the Hammermill Paper Co., has retired from that post but continues to be active with Thunder Bay forest industries.

C. B. DAVIES has been named manager of the Lancaster, New Brunswick, mill of Irving Pulp & Paper Co. He was formerly with the E. B. Eddy Co. at Hull, Que.

PAUL GRIFFIN, chemist at the Harmac mill of MacMillan & Bloedel, near Nanaimo, B.C., will study at the British Columbia Research Council in Vancouver under a company scholarship for corrosion research.

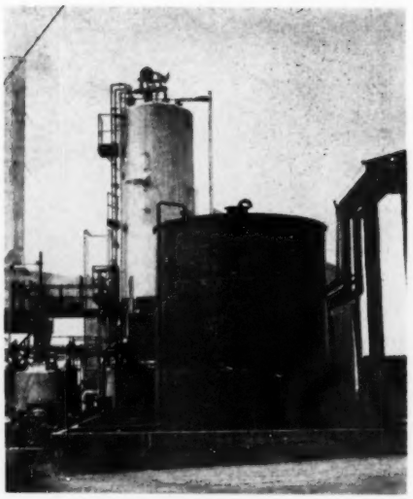
NEW FLINTKOTE PLANT

Continued from page 85

2000 gpm centrifugal double suction pump; two 800 gpm 4 percent consistency centrifugal pumps, serving jordan head box; one 1000 gpm 4 percent consistency refining pump; four 250 gpm 3 percent consistency liner chest pumps; two 1500 gpm 6 percent consistency pumps serving from liner pulper to chests; and six 1500 gpm centrifugal white water pumps serving vats.

The container plant alone has been in operation since Sept. 1952 and is housed in a one story building of concrete block construction, covering an area of 102,000 sq. ft. A rail siding parallels both the paper mill and container plant, permitting unloading of five cars of raw materials or loading of five cars of finished products at a time.

The corrugator includes many innovations, such as a new flute contour on the corrugating rolls; new transverse corrugating roll adjusting device; micro-adjustment of glue rolls; removable glue pan and several other notable mechanical features.



COMBUSTION ENGINEERING Steam Plant for the new board mill of The Flintkote Co. at San Leandro, Calif., with Graver hot line and soda treating of boiler water. C-E provided a 40,000 pph water-tube boiler.

An S & S 4-bar slitter and scorer is located so that special jobs and short orders may be slit and scored on their way to the printer-slotter storage area.

Two printer-slotters are used and the finishing department consists of two No. 485 Bostich-Bowee folder stitchers of the most recent design, including pre-feeders; one semi-automatic stitcher; one Universal open throat taper and one Jumbo type taper. The plant is also equipped to manufacture a new type glue-lap closure on a machine designed and built by Flintkote.

A complete sample and design department is in operation, equipped with an 80 in. S & S sample machine. Die-cut containers and interior packing will be manufactured on a Sheridan press having a 65 x 80 in. bed.

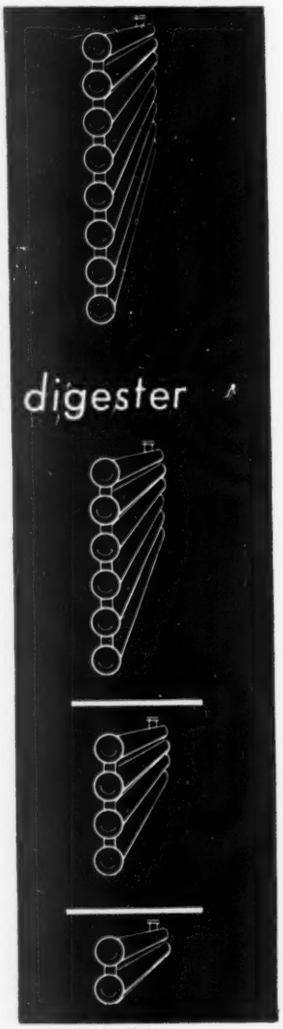
The company leases a GMC truck, with Trailmobile trailer, for making deliveries around the Bay Area, and the big blue Flintkote signs on this rig are becoming a familiar sight. There is a large dock for loading trucks and trailers at the plant.

J. DWIGHT TUDOR (left), Sales Mgr. for Folding and Set-up Box division of Pioneer Division, The Flintkote Co., and **R. W. CAPRON** (right), Sales Mgr. for new Container Division, San Leandro Plant.

a size for every mill

CHEMI-PULPER®

continuous digester



Units from 2 to 8 tubes capable of producing up to 100 tons of high grade pulp per day.

CHEMI-PULPER continuous digesters are producing quality pulp for mills making products ranging from board to bleach grades.

Write for Bulletin C2.

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PANDIA

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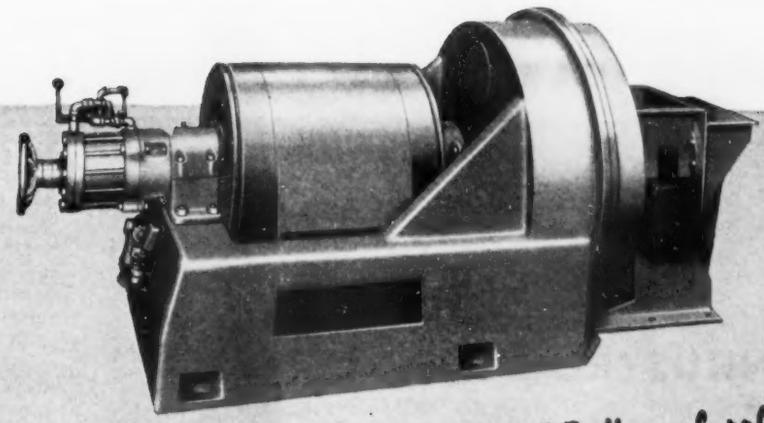


something NEW has been added to the BAUER line of refiners

No. 510 — a precision single revolving disc machine

With this great new refiner, you can keep abreast of the trend toward pulp processing machines of greater capacity.

The No. 510 has a rotating disc and a stationary disc, each 40" diameter. Maximum power input is 450 hp. Speed range is 750 to 1,450 r.p.m.

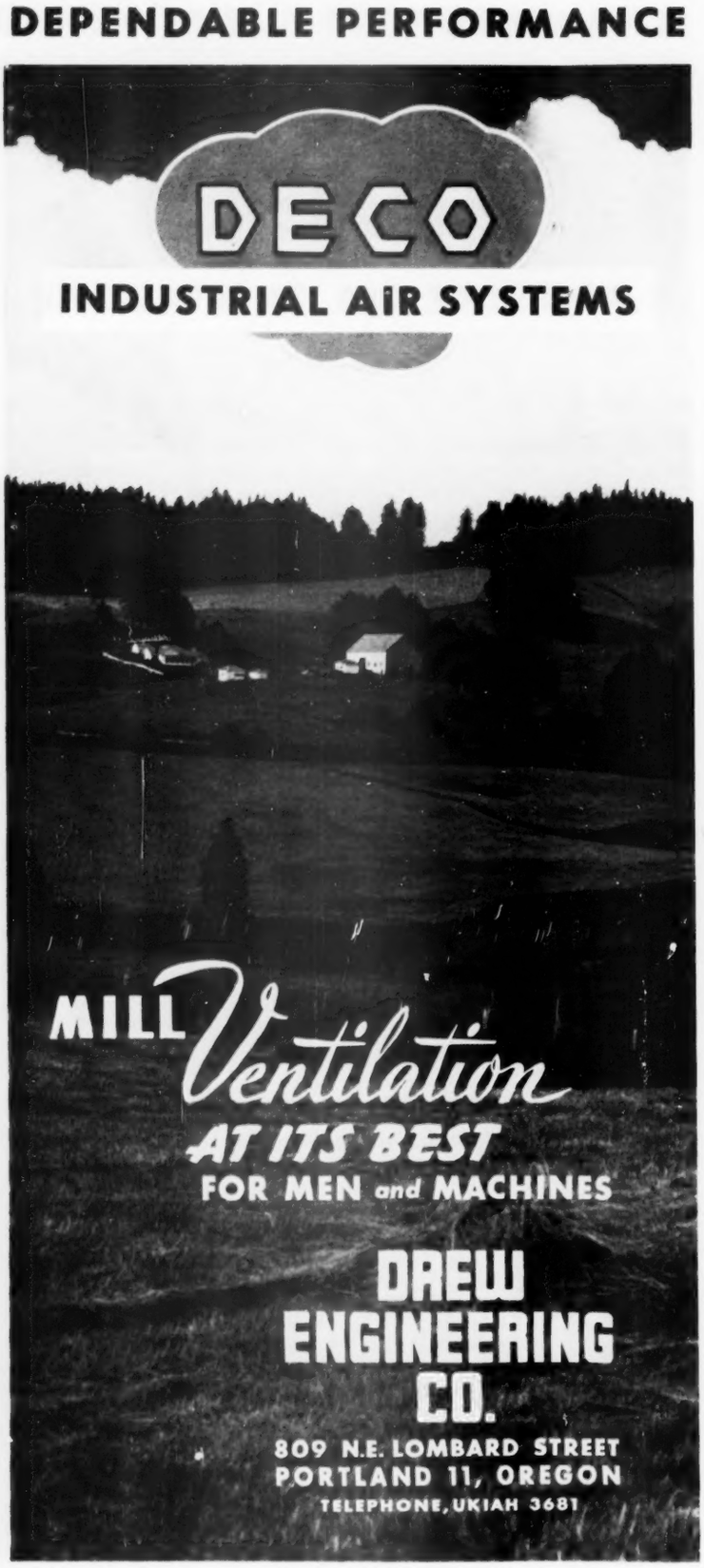
Experience in upwards of 175 mills with more than 500 Bauer double and single disc refiners has conclusively demonstrated the success of these machines in processing all recognized types of fibrous materials used in the pulp, paper, board, and felt roofing industries.

The Bauer No. 510 machine is particularly useful for reducing bulky and stringy materials in wet or dry condition and for refining low density pulps. End results are largely determined by the kinds of plates used. These are available from us in many patterns and in a variety of alloys as well as abrasives.

Specifications of the No. 510 Refiner are stated in our Bulletin No. P-10. Ask us for it.

THE Bauer BROS. CO.

1706 SHERIDAN AVE. • SPRINGFIELD, OHIO



First Prince Rupert Pulp for Edmonton Plant

First high alpha pulp from Columbia Cellulose Co's Prince Rupert, B.C., mill has been delivered to its associated enterprise, Canadian Chemical Co. at Edmonton, Alberta, where it is to be converted into acetate yarn and textile products.

The Edmonton plant represents a $70,000,000 investment in the petrochemical field by Celanese Corp. of America, whose first venture in Canada was the pulp mill completed two years ago at a cost of $30,000,000. This mill is now being expanded through the addition of two digesters, increasing water treatment facilities and other installations and will soon be producing 300 tons of pulp daily.

Borchers and Sanford Promoted in Bristol Co.

F. W. Borchers has been appointed general sales manager of The Bristol Co., Waterbury, Conn., manufacturers of automatic controlling, recording, telemetering, and aircraft instruments, and socket screw products, according to Harry E. Beane, vice president-sales.

Mr. Borchers joined Bristol in 1922 and in 1933 was appointed district manager of the Birmingham office. In 1935 he became district manager of the Philadelphia office and in 1946 district manager of the New York office. In 1948 he was appointed assistant sales manager.

Appointment of D. C. Sanford as manager of the application engineering department was also announced by Mr. Beane.

Mr. Sanford joined the company in 1937, became Birmingham district manager in 1946, and in 1948, an application engineer in Waterbury.

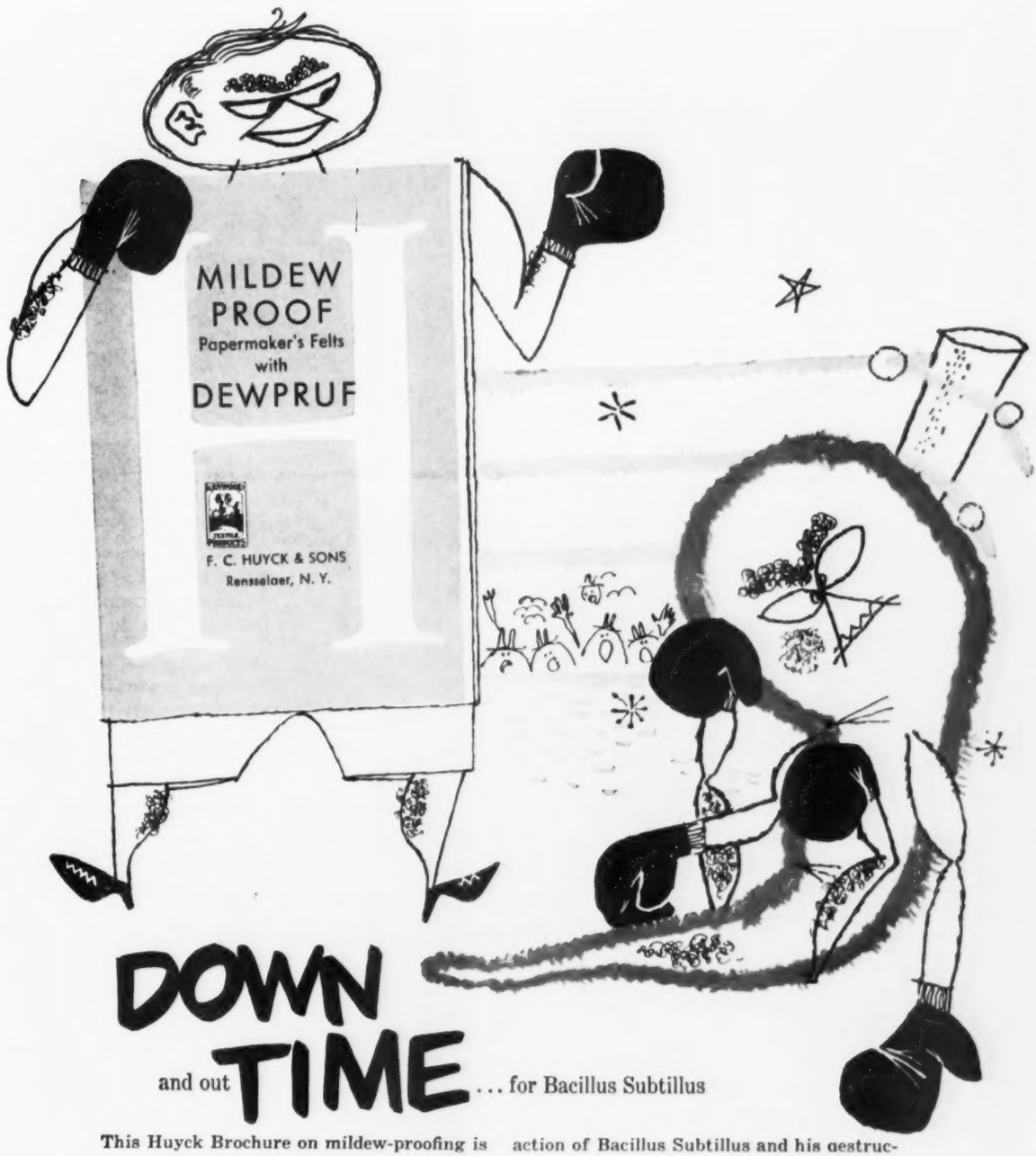
Kirby Lumber Gains; New Mill Starts in 1955

Kirby Lumber Corp.'s new $15,000,000 pine lumber mill at Silsbee, Tex., ten miles from East Texas P & P's Evadale project, will be in operation not later than Jan. 1, 1955, says a company report. It will make chips, also, for the pulp and paper industry.

Kirby's earnings in the first half of 1953 were $370,149, about $7,500 over the like period of 1952. Sales were $3,766,000 compared with $3,641,000. The company collects royalties from 72 oil wells, with four more coming in. Oil and gas income—$353,000 for first half of 1953.

Crown Z Sales Trainees

Crown Zellerbach Corp. recently graduated 12 trainees from its first class in a corporation wide basic sales training course. Certificates were presented by Vice President and Director F. N. Youngman in ceremonies at the company's Portland, Ore., offices.



DOWN and out TIME ... for Bacillus Subtillus

This Huyck Brochure on mildew-proofing is important to you and it's yours for the asking. It explains how the problem of mildew-making microbes which damage papermakers' felts is solved with DEWPRUF... the treatment that *permanently* resists the action of Bacillus Subtillus and his destructive cousins found in *every* water system. Write Department 17 for this free Brochure and discover how DEWPRUF can save you many, many down-time dollars by extending the life of your felts.

KENWOOD TEXTILE PRODUCTS

HUYCK FELTS

First in quality... first in service.

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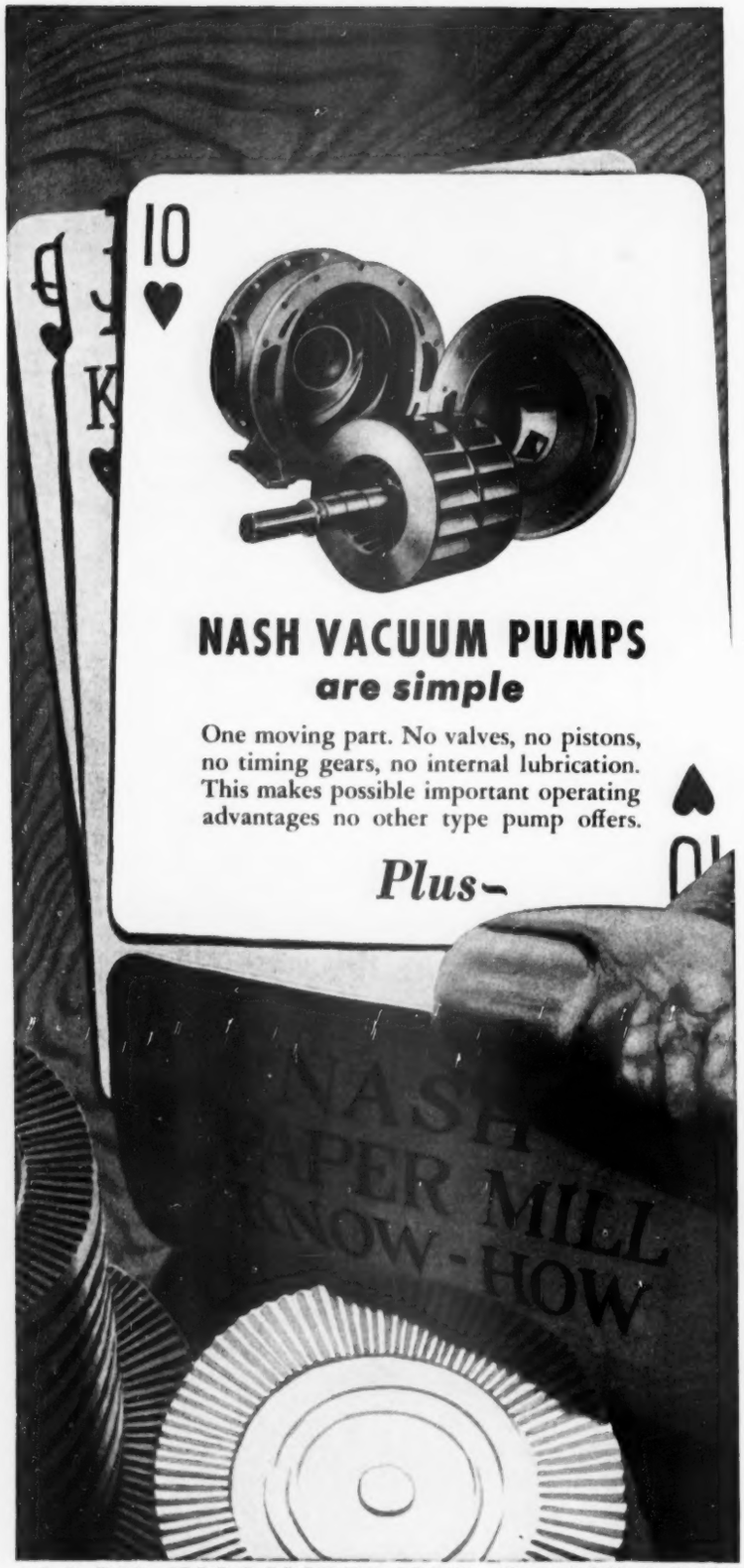
10
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One moving part. No valves, no pistons, no timing gears, no internal lubrication. This makes possible important operating advantages no other type pump offers.
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CYLINDER MACHINE MILL in Middle West interested in making close connection or working arrangement with converter who uses at present, or could use, cylinder machine products. Reply Box 156, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

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Northern Plant. Excellent opportunity for capable man. Write fully, giving details of experience and salary desired. Reply Box 158, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

WANTED: Applications from Electricians, Millwrights, and Pipefitters, for employment in new Pulp Mill in Alaska, are being given immediate consideration. Experience in pulp or paper industry will be helpful in taking advantage of opportunity for growth with large new dissolving type sulfite pulp unit. Please give full details of experience and personal history in reply to Box No. 159, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

POSITIONS OPEN—MEN WANTED

We have positions right now for managers, supts., asst. supts., foremen for all depts., chemists, master mechanics, plant engineers, etc.

CONFIDENTIAL EMPLOYMENT SERVICE

For paper mills, pulp mills and paper converting plants. Serving employers seeking executives and executives seeking positions.

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PAPER CHEMICALS SALESMEN
Several positions with good advancement potential available in large national chemical manufacturing organization, involving sales and service of chemicals to the paper manufacturer. Graduate chemists or chemical engineers age 25-30, preferred, but not essential. Several years' technical experience in paper industry required. Please submit complete resume and indicate salary desired. Our sales staff has been informed of these openings. Reply Box 157, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

Union Bag Sets Up Forestry Fellowships

Union Bag & Paper Corp. has granted Yale University $25,000 to provide 10 fellowships in the next five years for Southern graduate students at Yale School of Forestry. The grant was announced by George A. Garratt, dean of the school and G. W. E. Nicholson, executive vice president of Union Bag. Two fellowships, of $2,000 each (one to a Union Bag employe, the other open to graduate foresters) will be awarded annually for the next five years.

Chemical Linings Announces Pension Plan

Chemical Linings, Inc. of Watertown, N.Y. has initiated a voluntary retirement pension plan for all of its employes. The plan provides for retirement at 65 with benefits based on earnings and years of service, and added death benefits to dependents. This is in addition to group life and hospitalization insurance long available to employes.

HAM FELTZ says:

"Save the break-in time"

How many hours do you spend breaking in new felts for your board machines? Did it ever occur to you that you could save time by using felts that have been broken in and pre-shrunk before you use them? No necessity for you to keep adjusting stretch rolls to take up the slack that hangs down into the pit. Hamilton Felts do not sag—don't stretch, either.

Next time you are in the market for felts ask the Hamilton Sales Engineer why Hamilton Felts remove water faster, requires less time for adjustment—why Hamiltons put finer finish on your sheet and why they last so much *longer* without getting *shorter*.

SHULER & BENNINGHOFEN

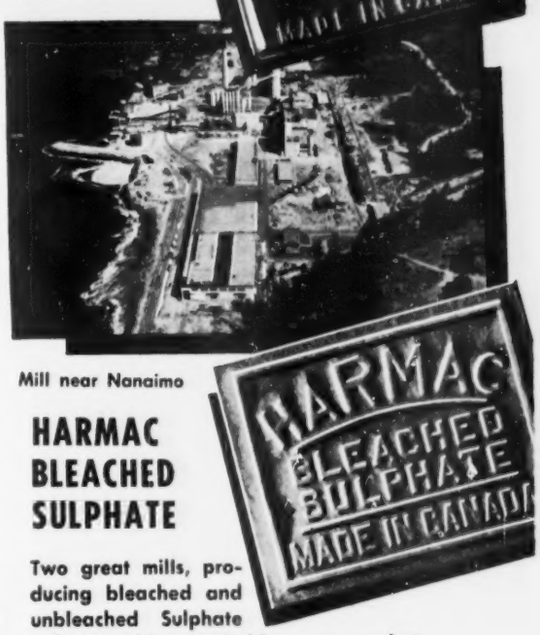
HAMILTON, OHIO

MIAMI WOOLEN MILLS Established 1806

Hamilton Felts

Mill at Port Alberni

BLOEDEL SUPERTARE KRAFT



Mill near Nanaimo

HARMAC BLEACHED SULPHATE

Two great mills, producing bleached and unbleached Sulphate pulp, provide a reliable open market supply for discriminating buyers.

The "brightness" of HARMAC pulp with the chlorine dioxide system of bleaching, and the "cleanliness" of BLOEDEL KRAFT, are features that contribute to the popularity of these products in world markets.

Rail and deep sea facilities at both mills.

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"Continuous Beater & Refiner"

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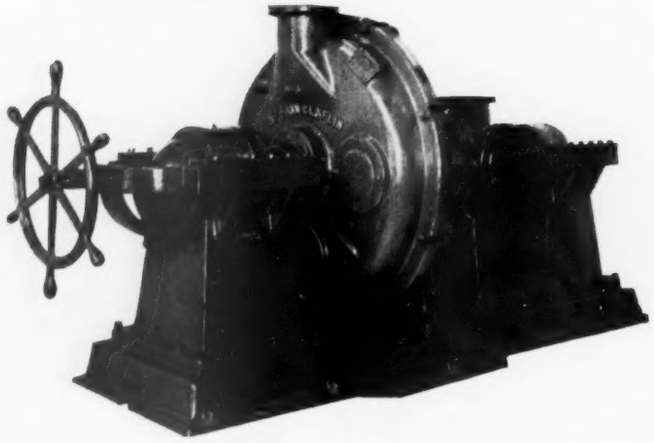


"Hot Brown Stock" Blow Tank to CLAFLIN direct to the Washers

"Asplund Fibre" .009 Corrugating

"Chemipulper" "Defibrator Stock" Roofing Felt

"Neutral Sulphite" .009 Corrugating

"Knotter-Screen Rejects"

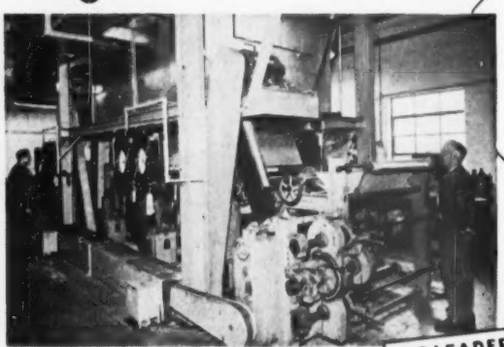
Straw-Bagasse

Four Size Units Including No. 0 For Laboratory-Test Purposes.

NOW AVAILABLE: NEW NO. 3 HEAVY DUTY UNIT WITH TANGENT HEAD-VOLUTE INLET. FOR DEFIBERING HOT BROWN STOCK. REQUIRES LESS THAN 1-H.P. PER TON.

THE HERMANN MFG. CO. LANCASTER, OHIO

again its WALDRON . .



Horizontal and Tower Coating and Impregnating for

MICA *Insulator* COMPANY

Above: WALDRON coating equipment and ROSS tower type dryer processing Fiberglas cloth.

Right: WALDRON equipment treating paper base material. ROSS drying units in rear.

For coating and impregnating the various base materials used in making their famous "Lamicoid" products and for coating Fiberglas cloth with silicones in processing their "Empire" products, Mica Insulator Company installed WALDRON equipment to secure a wider range of speed, different types of coating applicators and greater assurance of operating efficiency. Equipment is designed to handle their new types of inorganic coatings now being developed.

Our modern Laboratory is available to evaluate recommended processes. Submitting samples will assist us in our laboratory analysis of your particular problem.

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"STOCK-MAKERS" ARE TODAY TREATING:
RAG
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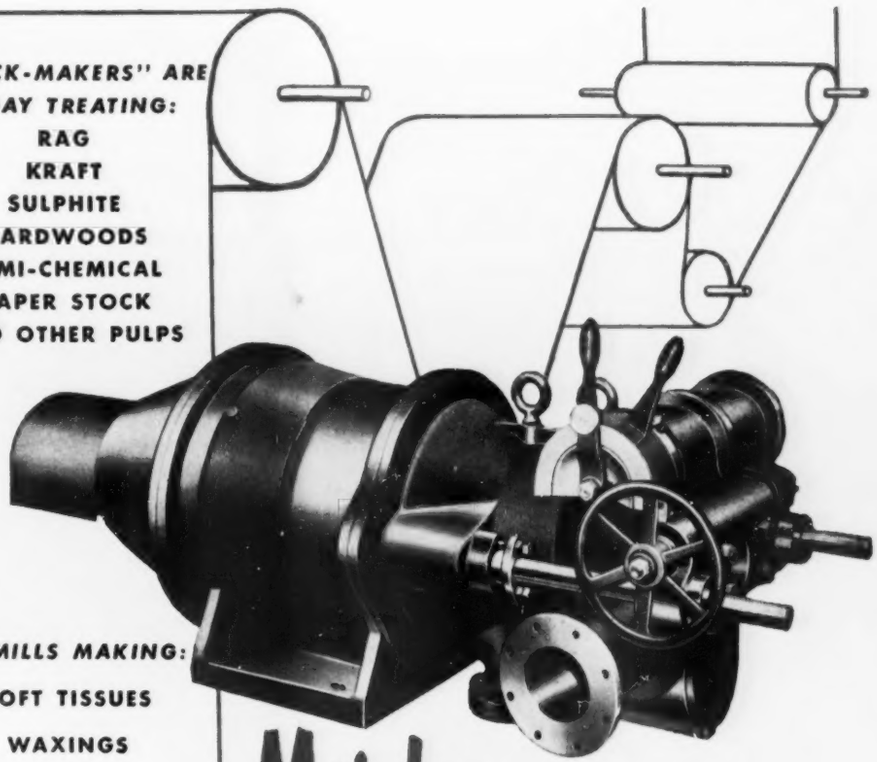
PAPER STOCK
AND OTHER PULPS



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AND OTHER GRADES

Morden "STOCK-MAKER" BEATS THEM ALL CONTINUOUSLY...

Direct from chest to chest or from chest to paper machine without batching or cycling.

The "Stock-Maker" gives the utmost efficiency in beating treatment — at one-half the power, in one-third the space, with none of the labor required by the ordinary conventional roll type beater.

The 700 "Stock-Maker" installations in 180 paper mills in 23 countries throughout the world prove that—

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STOCK PREPARATION EQUIPMENT
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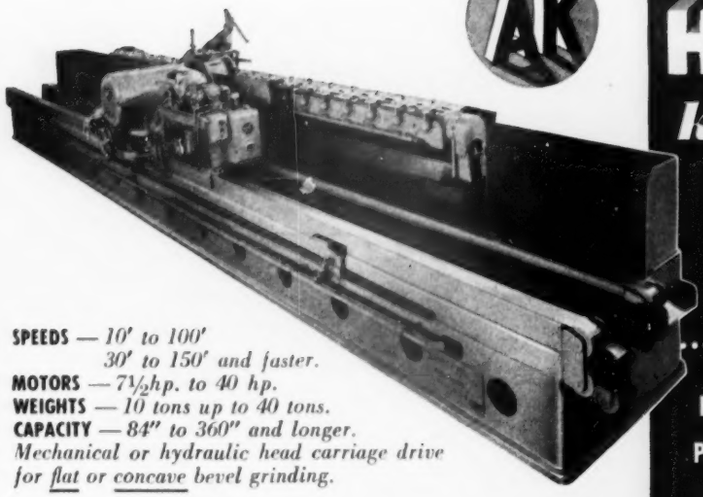
For complete information write
MORDEN MACHINES COMPANY
Corbett Building, Portland, Oregon

MODEL AK



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PULP AND PAPER
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FOR ACCURACY — FINEST FINISHES
PLUS HIGH PRODUCTION

SPEEDS — *10′ to 100′*
30′ to 150′ and faster.
MOTORS — *7½hp. to 40 hp.*
WEIGHTS — *10 tons up to 40 tons.*
CAPACITY — *84″ to 360″ and longer.*
Mechanical or hydraulic head carriage drive for flat or concave bevel grinding.

Other Models.
GK — **medium heavy duty** — *capacity 32″ to 184″*
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World's Largest Manufacturer of Knife Grinding and Saw Sharpening Machinery
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A GREAT NEW 23 LB. BABY!
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COMPARE THE CUTTING SPEED WITH ANY OTHER CHAIN SAW

AND ONLY
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WITH 15″ ATTACHMENTS
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Another first for I.E.L. . . . . The Featherweight Model H. A. Years of engineering knowledge went into this lightweight masterpiece of cutting power, strength and efficiency . . . New I.E.L. designed automatic centrifugal clutch, new narrower kerf and shorter pitch, chrome plated chain gives you more teeth to the foot per minute for high speed, high profit cutting. The Featherweight Model H. A. is the most compact, powerful lightweight cutting tool of its kind on the market today.

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October 1953

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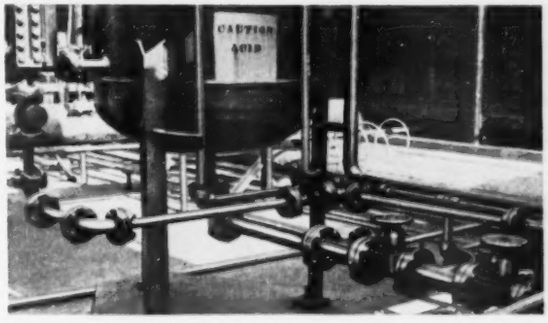
Corn Processing Division

CLINTON, IOWA

CORROSIVE FERRIC CHLORIDE FLOWS THROUGH THIS SARAN LINED INSTALLATION

Large West Coast refinery depends on easy-to-install SARAN LINED STEEL PIPE to resist corrosion and assure uninterrupted processing



Some time ago, a large West Coast oil company investigated better methods to handle corrosive ferric chloride solution. The company's successful operation demands uninterrupted processing. Unscheduled "shutdowns" mean production pile-ups, layoffs and heavy expense. Saran Lined Steel Pipe was successful from the start. The use of Saran Lined Pipe Fittings and Valves assured tight, leakproof joints. The dependable, long-term service and excellent corrosion resistance of strong, rigid Saran Lined Pipe will postpone replacements indefinitely. Saran Lined Steel Pipe can be delivered immediately, cut and threaded to your specifications or fabricated in the field with your own equipment. We'll be glad to assist you with installation plans. Write or call the SARAN LINED PIPE COMPANY, Ferndale, Michigan. Offices in New York • Boston • Pittsburgh • Tulsa Philadelphia • Chicago • Portland • Indianapolis • San Francisco • Houston • Denver • Los Angeles • Seattle Cleveland • Charleston, S. C. • Toronto • Montreal.

RELATED SARAN PRODUCTS

Saran rubber tank lining • Saran rubber molding stock
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Please send me a copy of your catalog on Saran Lined Pipe, Valves and Fittings.

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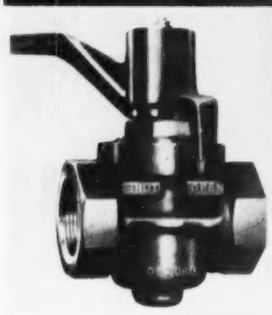
DeZURIK FINER MILL EQUIPMENT



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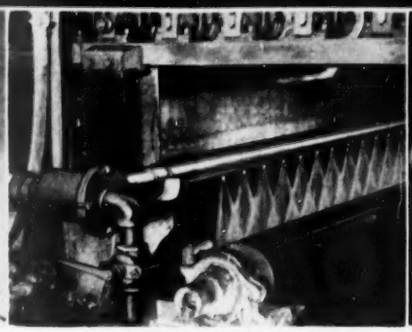

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DeZURIK Mill Equipment is proved equipment . . . backed by over 28 years of successful service in the pulp and paper industry.

DeZURIK EASY-OPERATING VALVES provide superior service on all mill lines;

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For the paper industry Corn Products Refining Company supplies a variety of specialized starches and adhesives... superior formula ingredients for such processes as beating, corrugating and laminating.

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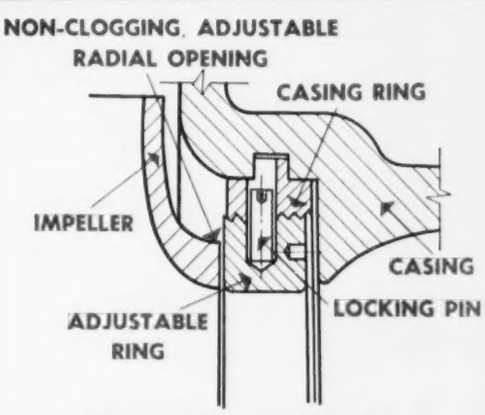
WEARING RING DESIGN Cuts Fan Pump Costs

- *Adjustable clearance keeps efficiency high*
- *Radial opening eliminates damage from jamming*

ALLIS-CHALMERS

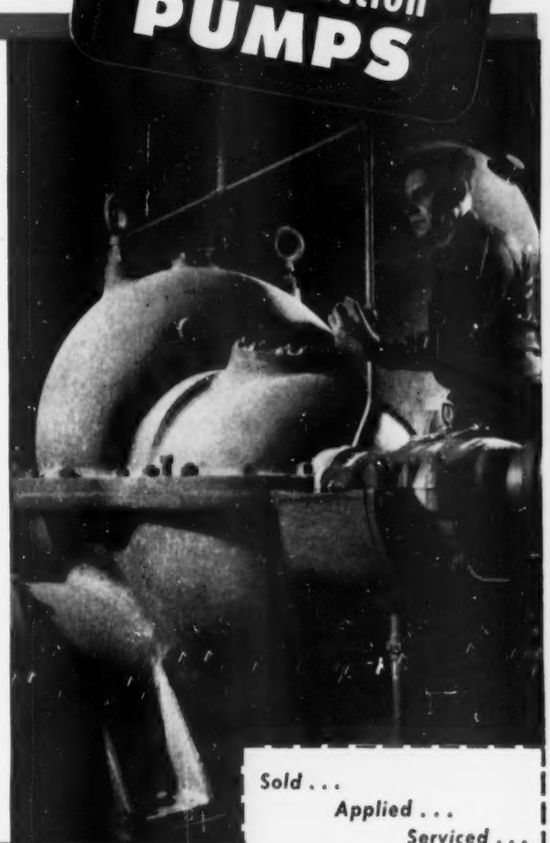
Double Suction PUMPS



Here's How It Works

Clearance between the wearing ring and the impeller can be adjusted by simply removing the locking pin, turning the threaded inner ring until the correct clearance is established and resetting the locking pin. In addition to keeping efficiency high, small clearances also tend to exclude solid materials and reduce clogging problems.

With ordinary wearing rings, solid material between ring and impeller may deflect the shaft or cause the impeller to seize. With Allis-Chalmers wearing rings with radial clearance, solid materials between rings simply increase the load on the thrust bearing slightly and wear themselves free.



YOU CAN GET HELP on all your stock handling problems from an Allis-Chalmers pump engineer. And Allis-Chalmers can supply the complete pumping unit — pump, motor, drive and control — all of coordinated design and manufacture . . . assembled and ready to install.

For more information on Allis-Chalmers pumps for paper mills, call your nearby Allis-Chalmers Authorized Distributor or representative or write Allis-Chalmers, Milwaukee 1, Wisconsin. Ask for centrifugal pump Bulletins 08B6146, 52B7112 and 52B7839.

A-3972

Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

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MOTORS — ½ to 25,000 hp and up. All types.

CONTROL — Manual, magnetic and combination starters; push button stations and components for complete control systems.

TEXROPE V-belts in all sizes and sections, standard and *Vari-Pitch* sheaves, speed changers.

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Don't rod out scale—

Dissolve it

OAKITE COMPOUND No. 32 did all the work on this pipe—better, faster, far more safely than any mechanical method. It *dissolves* scale and rust as it flows, removes all deposits, flows into areas inaccessible to rod and drill. Often makes dismantling unnecessary. Excellent for heat exchangers, vacuum pumps, evaporators.

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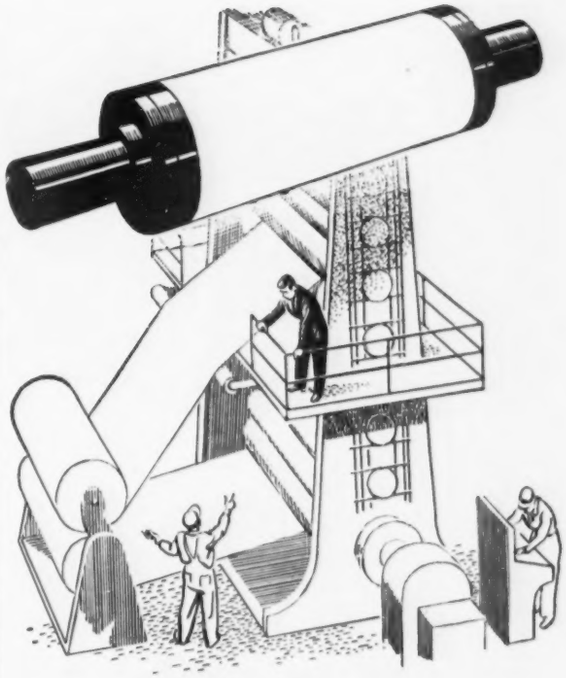

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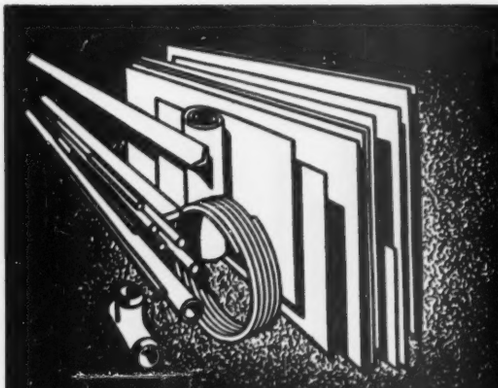

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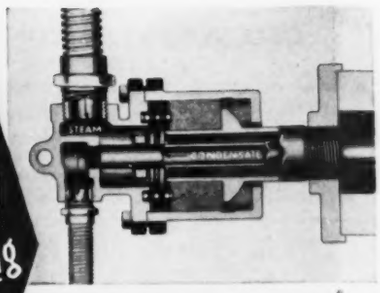

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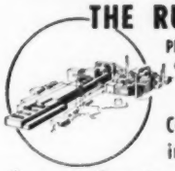

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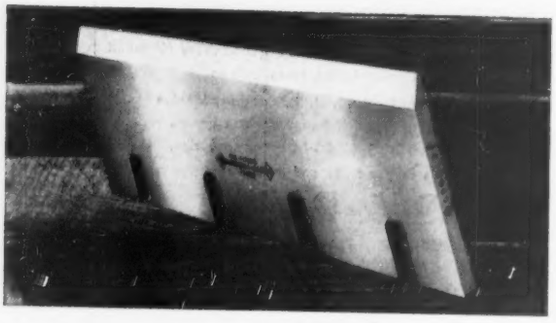

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